ADDENDUM NO. 8 AND CONSISTENCY EVALUATION
FINAL ENVIRONMENTAL IMPACT REPORT
SAN BERNARDINO ALLIANCE CALIFORNIA SPECIFIC PLAN

(San Bernardino International Trade Center Specific Plan EIR SCH #95082052)

Prepared for:

Oliver Mujica
City of San Bernardino
300 N. "D" Street, 3rd Floor
San Bernardino, California 92418

and

Kathy Hoffer
Hillwood
901 Via Piemonte, Suite 175
Ontario, California 91764

Prepared by:

LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, California 92507

November 8, 2016

TABLE OF CONTENTS

A. INTRODUCTION / EXECUTIVE SUMMARY 1
B. BACKGROUND 1
C. PROPOSED ADDENDUM NO. 8 3
D. ENVIRONMENTAL ASSESSMENT 8
1. Aesthetics 8
2. Agricultural Resources 9
3. Air Quality 9
4. Biological Resources 15
5. Cultural Resources 17
6. Geology and Soils 17
7. Hazards and Hazardous Materials 18
8. Hydrology and Water Quality 19
9. Land Use and Planning 21
10. Mineral Resources 21
11. Noise 21
12. Population and Housing 22
13. Public Services 22
14. Recreation 23
15. Transportation/Traffic 23
16. Utilities and Service Systems 29
17. Mandatory Findings of Significance 30
E. ADDENDUM DOCUMENTATION 30
F. SUMMARY AND CONCLUSIONS 31
G. REFERENCES AND SOURCES 31

APPENDICES

A. PHASE 1 ENVIRONMENTAL SITE ASSESSMENT
B. CITY CONDITIONS OF APPROVAL
C. 2007 ACSP EIR ADDENDUM NO. 1 MITIGATION MEASURES
D. 1995 EIR MITIGATION MEASURES
E. 2016 TRANSLUTIONS TRAFFIC STUDY

A. INTRODUCTION / EXECUTIVE SUMMARY

The Final Environmental Impact Report (EIR) State Clearinghouse No. 95082052 for the San Bernardino International Trade Center Specific Plan (now known as the San Bernardino Alliance California Specific Plan or SBACSP) was originally approved in 1995 to comply with the requirements of the California Environmental Quality Act (CEQA). The following is a list of previous addendums to SBCASP:

- In 2007, Addendum No. 1 to the EIR was approved by the City that allowed the Southgate Planning Area to have a total of 2,887,036 square feet of enclosed industrial space. In April 2011
- Addendum No. 2 was approved by the City that allowed the Southgate Planning Area to have 2,776,219 square feet (3.84% less than under Addendum No. 1).
- Addendum No. 3 documented consistency of Building 2 for the Southgate Planning Area with the approved Specific Plan EIR (SCH #9502052).
- Addendum No. 4 documented development of Building 4 with 871,920 square feet consistent with the approved Specific Plan EIR.
- Addendum No. 5 documented consistency of the Central Park project with 290,648 square feet and Building 1 with 157,500 square feet with the approved Specific Plan EIR and the previously approved EIR Addenda Nos. 1 – 5 dealing with development within the Southgate portion of the SBACSP.
- Addendum No. 6 documented the development plan for the Westgate area which included demolishing one existing warehouse building and adding two new buildings (Buildings 2 and 3) with a total of 380,172 square feet on 18.53 acres (46.9% coverage) with 317 auto parking spaces and supporting infrastructure.
- The City is currently processing EIR Addendum 7 for proposed development of a 620,480 square foot warehouse building in the Northgate Planning Area.

This Addendum No. 8 is for development of one logistics warehouse building with 476,604 square feet on the last remaining vacant parcel of the Westgate area, consistent with the overall development limits of the SBACSP.

B. BACKGROUND

In 1995 when the Norton Air Force Base was realigned (i.e., closed), the City approved an EIR for the San Bernardino International Trade Center Specific Plan (SBITCSP). In early 2007, the Inland Valley Development Agency (“IVDA”) submitted an application to the City of San Bernardino (“City”) to amend the SBITCSP. In addition, Hillwood Investment Properties, LLC (“Hillwood”) submitted applications to construct warehouse/distribution facilities, consolidate parcels, and re-subdivide the property.

The SBITCSP Amendment No. 06-03 included the following changes:

- Change the name of the "San Bernardino International Trade Center Specific Plan" to "San Bernardino Alliance California Specific Plan";
- Expand the Specific Plan area to include 32.6 acres of land adjacent to the current Specific Plan boundaries;
- Update the maximum allowable capacity of the Specific Plan, by transferring approved un-built square-footage among planning areas;
- Change the district names of the various planning areas within the Specific Plan to Northgate, Centergate, Westgate, Southgate, 3rd Street, and D.F.A.S.; and
- Provide for a future boundary adjustment to the 3rd Street District.

Original 1995 EIR and Addendum No. 1
On May 8, the City Planning Commission recommended approval of the original Southgate project to the Mayor and Common Council. On May 21, 2007, the City Mayor and Common Council approved Specific Plan Amendment No. 06-03, Variance No. 07-08, Tentative Parcel Map No. 17887 for Subdivision No. 06-13, and Development Permit 2 No. 06-06. To comply with CEQA, the City adopted an Addendum to the original EIR prepared for the SBITCSP and certified by the Mayor and Common Council in 1995. At the time the SPA and related applications were approved, the project development plans indicated the Southgate Planning Area would have a total of 2,887,036 square feet of enclosed warehouse space.

EIR Addendum No. 2
In early 2011, Hillwood proposed to develop the Southgate Planning Area with a total of 2.78 million square feet of warehouse space which was 3.8 percent less building area than approved by the City under EIR Addendum No. 1 (2.89 million square feet).

EIR Addendum No. 3
As Hillwood continued to build out the Southgate project, they requested to slightly reduce the total building area of Southgate property to 2.75 million square feet or 1.08 percent less than the building area of 2.78 million square feet approved by Addendum No. 2. The City processed Addendum No. 3 in June of 2012.

EIR Addendum No. 4
Hillwood continued to build out the Southgate project and proposed to construct Building No. 4 with 871,920 square feet which is the same square footage for Building No. 4 that was approved under Addendum No. 3 (2.75 million square feet) which was 1.08 percent less than the original approved building area of 2.78 million square feet. The City processed this Addendum No. 4 in August of 2012.

EIR Addendum No. 5
Hillwood finished build out of the Southgate project by proposing to construct Central Park with 290,648 square feet and Building No. 1 with 157,500 square feet. This was the same square footage for these buildings that was approved under Addendum No. 4

(total 2.75 million square feet) and 4.8 percent less than the original approved building area of 2.89 million square feet. It should be noted that the original Central Park area in the original Specific Plan showed a number of smaller buildings, but the later proposal, approved in 2013, was for one larger warehouse building in this area, but it was still within the overall square footage allowance under the most recent EIR Addendum. Hillwood also processed a Minor Amendment to process this minor change to the project land plan.

EIR Addendum No. 6
This documented development for the Westgate area which included demolishing one existing warehouse building and adding two new buildings (Buildings 2 and 3) with a total of 380,172 square feet on 18.53 acres (46.9% coverage) with 317 auto parking spaces and supporting infrastructure. The Westgate area development would be only 63 percent of its currently approved allocation of 3,327,984 square feet. The City processed Addendum No. 6 in 2015.

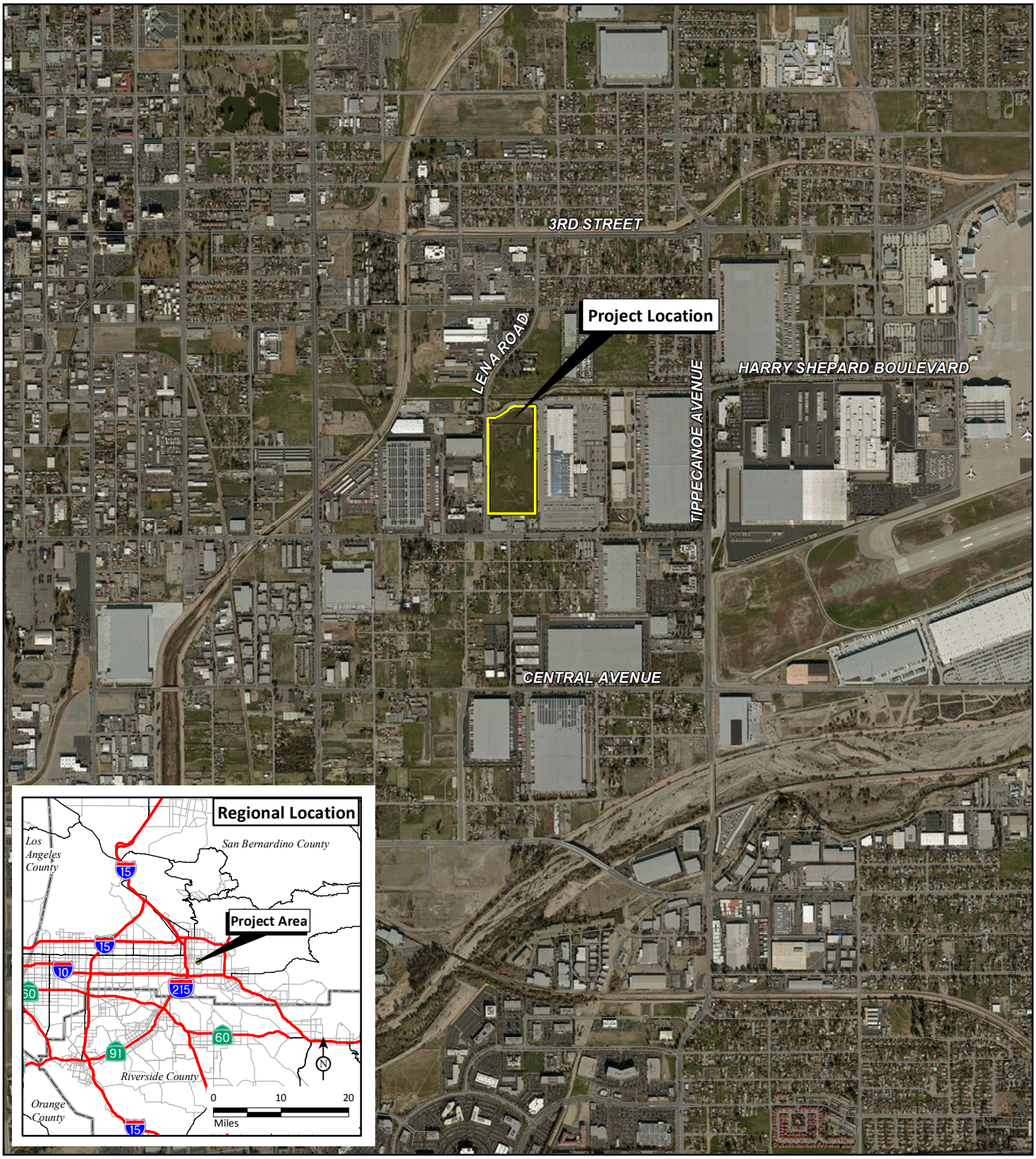
EIR Addendum No. 7 (in process)
The Northgate area currently contains the Mattel industrial warehouse building encompassing 1.2 million square feet, plus several existing facilities, including the City–owned Galaxy (recreation) center (Parcel G-1) and Grace Church (Parcels J-1 and J-2) known as “Operation Grace: on either side of Del Rosa Drive. Once Parcels G-1, J & J-1 have been transferred, the 30.24-acre site would be available for development. Hillwood is proposing development of a Class A Logistics Center of approximately 620,480 square feet.

C. PROPOSED ADDENDUM NO. 8

The previous Addendum No. 6 approved demolition of three smaller existing warehouse buildings west of the Pep Boys warehouse and adding two new buildings (Buildings 2 and 3) with a total of 380,172 square feet on 18.53 acres in the Westgate area. Figure 1 shows the regional and project location of the Westgate Building 4 development. The current Westgate area encompasses three existing older warehouse buildings with a total of 152,342 square feet as shown in Table A.

Table A: Existing Westgate Land Uses

Tenant	Area (SF)
Konstantine Enterprises	5,000
GM Business Interiors	20,000
California Redwood Products	41,891
Faith Industries	41,891
California Redwood Products (Outdoor Storage)	43,560
Total	**152,342**



LSA

FIGURE 1

N

0 1000 2000
FEET

SOURCE: Bing Aerial, 2015; ESRI Streetmap, 2013.

I:\HIP1602\Reports\EIR_Addendum\fig1_RegLoc.mxd (11/7/2016)

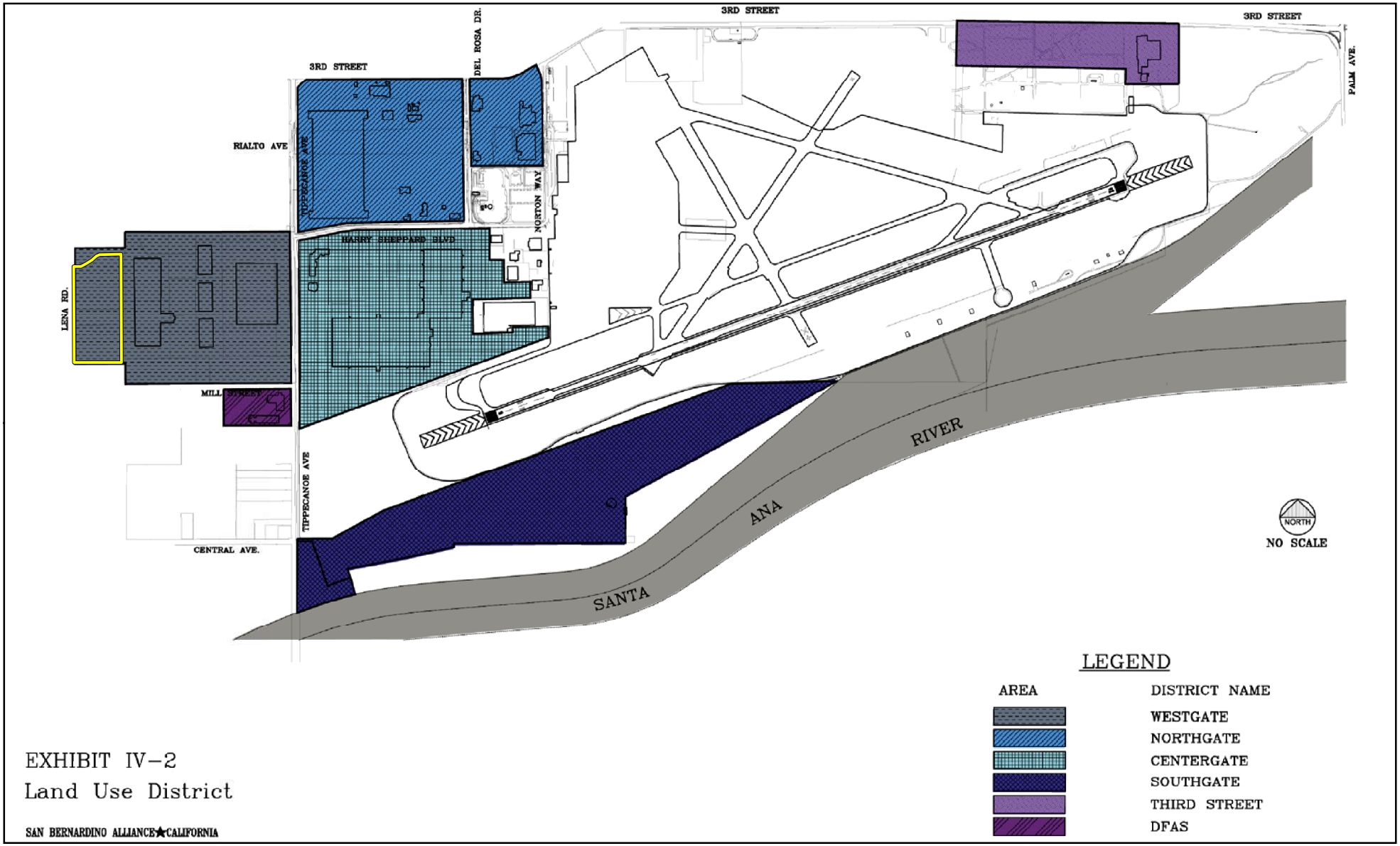
City of San Bernardino
Westgate Building 4

Regional and Project Location

Figure 2 shows the Westgate area in relation to the overall San Bernardino Alliance California Specific Plan. As shown in Table B, the Westgate area currently has 2,096,580 square feet of development including Phase 1 under Addendum No. 6. The proposed Westgate Building 4 structure would have 476,604 square feet which would result in a total development of 2,573,184 square feet compared to the total allowable building area of 3,327,984 square feet for the whole Westgate area under the SBACSP. Based on this information, the Westgate area would still be well within its currently approved allocation of 3.3 million square feet (77 percent) with development of the proposed Westgate Building 4 development. Therefore, the potential environmental impacts of the current Westgate Building 4 development proposal (one new building with 476,604 square feet) would produce equal or less severe impacts compared to those identified in the 1995 EIR and the 2007 SPA No. 06-03. Figure 3 shows the conceptual site plan layout for the current Westgate Building 4 development proposal.

Table B: Westgate Development Plan (Phases 1 and 2)

Warehousing	Square Footage	Comments
Pep Boys	1,140,000	Includes existing & expansion
Kohl's warehouse	576,408	—
Existing older warehouses	(152,342)	(to be demolished per Phase 1)
Phase 1 (Addendum No. 6)	380,172	Buildings No. 2 and 3
Sub-Total Approved (Square Footage)	2,096,580	
Proposed Westgate Building 4	476,604	
Total Westgate with Building 4	2,573,184	Current Addendum No. 8
Approved Square Footage	3,327,984	
Percent proposed v. approved	77%	



LSA

LEGEND

Project Boundary

N

0 1000 2000

FEET

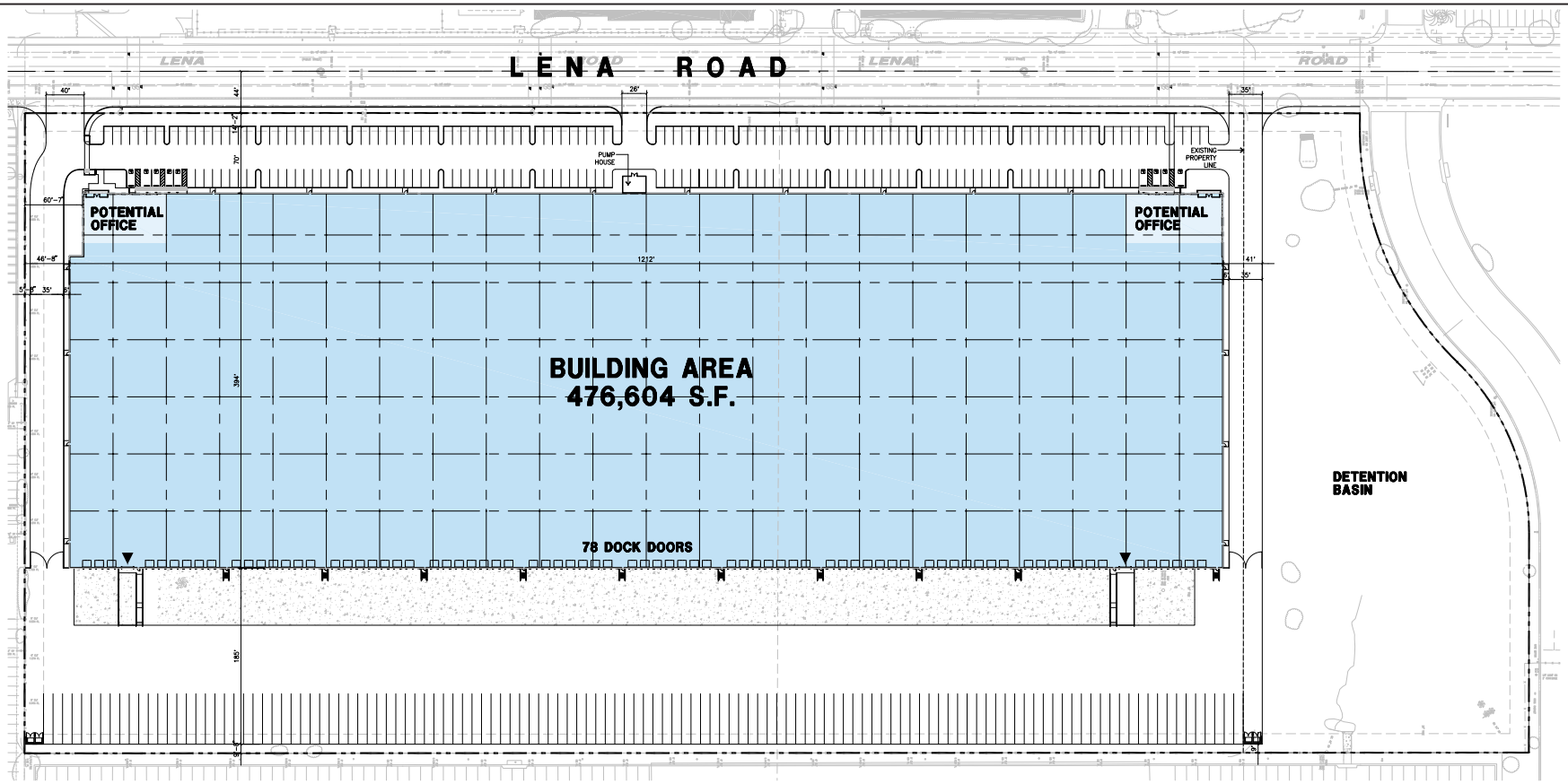
FIGURE 2

City of San Bernardino
Westgate Building 4

SBACSP Districts

SOURCE: San Bernardino Alliance California Specific Plan, 2007

I:\HIP1602\Reports\EIR_Addendum\fig2_SBACSP_Dist.mxd (11/7/2016)



Note: This is a conceptual plan. It is based on preliminary information which is not fully verified and may be incomplete. It is meant as a comparative aid in examining alternate development strategies and any quantities indicated are subject to revision as more reliable information becomes available.

Legend

- POTENTIAL OFFICE
- WAREHOUSE
- ▼ DRIVE THRU DOOR

LSA

FIGURE 3

0 90 180
FEET

SOURCE: HPA Architecture, 2016

City of San Bernardino
Westgate Building 4

Westgate Building 4 Conceptual Site Plan

I:\HIP1602\Reports\EIR_Addendum\fig3_SitePlan.cdr (11/04/2016)

D. ENVIRONMENTAL ASSESSMENT

To document CEQA compliance of SPA No. 06-03 in 2007, the City approved an Initial Study ("2007 IS") that examined 18 different environmental issues relative to the analysis and conclusions in original Specific Plan EIR. This Addendum No. 8 document follows a similar format, presents the findings of the previous assessments for Addenda No. 1 through No. 7, and identify any differences presented by the current application.

1. Aesthetics

The 2007 IS concluded that all aesthetic impacts of the proposed SBACSP would be less than significant without mitigation except "additional light and glare" impacts. The following mitigation measure has been modified from the 2007 IS and is recommended to help reduce these potential impacts to less than significant levels:

AE-1 Prior to the issuance of any building permits, all development plans (e.g., site plans and tract maps) within the Westgate Warehouse Project area will be submitted to the San Bernardino International Airport for review and approval relative to building heights and potential lighting impacts. Building heights shall conform to the Specific Plan and/or Airport Land Use Handbook requirements, whichever is more restrictive. This measure shall be implemented to the satisfaction of the City Public Works Director.

In addition, the following Condition of Approval from EIR Addendum No. 6 will help further reduce potential lighting impacts for the currently proposed development plan:

<u>2. Grading and Landscaping</u>

o. The on-site improvement plan shall include details of on-site lighting, including light location, type of poles and fixtures, foundation design, conduit location and size, and the number and size of conductors. Photometry calculations shall be provided which show that the proposed on-site lighting design will provide 1 foot-candle of illumination uniformly distributed over the surface of the parking lot during hours of operation and 0.25 foot-candles security lighting during all other hours.

The project will apply for a mass grading permit as part of its development plan review process, and grading is expected to be balanced onsite. The current development proposal for the Westgate area is smaller than the approved development for the Westgate area under the SBCASP and the EIR with implementation of the previously approved mitigation measure and condition of approval. With these, aesthetic impacts of the current development proposal would be less than significant.

2. Agricultural Resources

The 1995 EIR and 2007 IS concluded that the SBACSP property did not contain significant agricultural soils or resources, and impacts relative to these resources would be less than significant without mitigation. The current development proposal for the Westgate area is smaller than and consistent with the development configuration (i.e., building square footage) of the approved development plan for the Westgate area under the SBCASP and the EIR. Therefore, agricultural impacts of the current development proposal would be less than significant and consistent with the 1995 EIR.

3. Air Quality

The 1995 EIR and 2007 IS concluded that short-term, construction-related air quality impacts of the proposed SBACSP would be less than significant with implementation of the following mitigation measures (see Appendix D) that had been updated or "modernized" from the original EIR in 1995 in the approval for EIR Addendum No. 6:

AQ-1 Air Quality Mitigation Measure Implementation Plan.

AQ-2 Dust Control Plan.

AQ-3 Proper maintenance of construction equipment.

AQ-4 Restrict equipment idling to 5 minutes or less.

AQ-5 Construction equipment will use cooled exhaust gas recirculation, oxidized diesel catalyst and aqueous diesel fuel with maximum 16,224 horse-power hours/day.

AQ-6 Provide onsite electrical power connection to eliminate onsite generators.

AQ-7 Use low emissions emulsified asphalt/asphaltic cement in parking lots and roads.

AQ-8 Use only low volatile paints and coatings as outlined in SCAQMD Rule 1113.

The 2007 IS also concluded that long-term air pollutant emissions from project operation would exceed the SCAQMD daily thresholds by a wide margin (mainly due to the size and nature of the project), even with implementation of the following mitigation measures:

AQ-9 Provide information on carpooling and public transit options for workers.

AQ-10 Implement emission reduction plan/targets per SCAQMD Rule 2202.

AQ-11 Preferential parking for carpools and vanpools.

AQ-12 Provide improvements for bus stops per local transit district requirements.

AQ-13 Separate employee/visitor parking from truck fleet parking to reduce conflicts.

AQ-14 Post "no idling" signs in truck areas to minimize emissions.

AQ-15 Include insulation in all buildings in excess of Title 24 requirements.

AQ-16 Incorporate skylights into building design as practical.

AQ-17 Install drought-tolerant landscaping.

AQ-18 Implement Air Quality Monitoring Plan for short- and long-term measures.

Construction Emissions. Construction emissions estimated in the 1995 EIR and 2007 IS were made using the older URBEMIS software, but the potential construction-related emissions from the new Westgate Building 4 project were calculated using the most current CalEEMod software from the SCAQMD. Table C summarizes the potential construction emissions from the proposed Westgate Building 4 project, including demolition of the existing buildings, and reveals there would be no significant construction-related air pollutant impacts.

Table C: Short-Term Regional Construction Emissions

Construction Phase	Total Regional Pollutant Emissions, lbs/day							
	VOC	NO_X	CO	SO_2	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Demolition	4.3	46	24	0.05	1.2	2.2	0.22	2.1
Site Preparation	5.1	52	25	0.04	8.3	2.9	4.5	2.6
Grading	5.9	68	40	0.06	4.1	3.1	1.7	2.8
Building Construction	6.4	47	46	0.11	4.9	2.0	1.3	1.9
Paving	2.9	18	16	0.02	0.17	0.96	0.04	0.88
Architectural Coating	27	2.6	6.5	0.01	0.80	0.18	0.21	0.18
Peak Daily	**33**	**68**	**52**	**0.12**	**11**		**7.2**	
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**		**55**	
Significant Emissions?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: Compiled by LSA Associates, Inc. (October 2016).
Assumes the Building Construction and Architectural Coating phases overlap. PM10 and PM2.5 emissions are from the CalEEMod Mitigated results - the only "mitigation" applied in this modeling are the required dust control measures per SCAQMD Rule 403.
CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_x = sulfur oxides
VOC = volatile organic compounds

Table D details the proposed construction schedule for the proposed Westgate Building 4 project.

Table D: Construction Schedule

Phase Name	Phase Start Date	Phase End Date	Number of Days/Week	Number of Days
Demolition	1/2/2017	1/27/2017	5	20
Site Preparation	1/28/2017	2/10/2017	5	10
Grading	2/11/2017	3/24/2017	5	30
Building Construction	3/25/2017	5/18/2018	5	300
Paving	5/19/2018	6/15/2018	5	20
Architectural Coating	9/16/2017	5/18/2018	5	175

Source: Compiled by LSA Associates, Inc. (October 2016).

Table E details diesel construction equipment utilized by construction phase in accordance with the proposed construction schedule outlined above.

Table E: Diesel Construction Equipment Utilized by Construction Phase

Construction Phase	Off-Road Equipment Type	Off-Road Equipment Unit Amount	Hours Used per Day	Horsepower	Load Factor
Demolition	Excavators	3	8	158	0.38
	Concrete/Industrial Saws	1	8	81	0.73
	Rubber Tired Dozers	2	8	247	0.4
Site Preparation	Tractors/Loaders/Backhoes	4	8	97	0.37
	Rubber Tired Dozers	3	8	247	0.4
Grading	Excavators	2	8	158	0.38
	Rubber Tired Dozers	1	8	247	0.4
	Graders	1	8	187	0.41
	Tractors/Loaders/Backhoes	2	8	97	0.37
	Scrapers	2	8	367	0.48
Building Construction	Cranes	1	7	231	0.29
	Forklifts	3	8	89	0.2
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	3	7	97	0.37
	Welders	1	8	46	0.45
Architectural Coating	Air Compressors	1	6	78	0.48
Paving	Pavers	2	8	130	0.42
	Rollers	2	8	80	0.38
	Paving Equipment	2	8	132	0.36

Source: Compiled by LSA Associates, Inc. (October 2016).

Table F reveals the proposed Westgate Building 4 project would not exceed construction-related localized significance thresholds (LST). This analysis utilized the worst-case scenario for distance between the proposed project and nearby sensitive receptors, which was calculated to be 25 meters (82 feet), and concluded the proposed Westgate Building 4 project would not result in significant LST-related emissions.

Table F: Construction LST Impacts

Emissions Sources	NO_X	CO	PM_{10}	$PM_{2.5}$
On-site Emissions (lbs/day)	68	39	11	7.1
LST Thresholds	**270**	**1,746**	**14**	**8.0**
Significant Emissions?	**No**	**No**	**No**	**No**

Source: Compiled by LSA Associates, Inc. (October 2016).
SRA: Central San Bernardino Valley, 5 acres, 25 meter distance
CO = carbon monoxide
lbs/day = pounds per day
LST = local significance threshold
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

This analysis utilizes the SCAQMD stationary source threshold for industrial uses, at 10,000 CO_2e (carbon dioxide equivalent). Table G details greenhouse gas (GHG) emissions, presented as carbon dioxide equivalent (CO_2e), projected to be generated from construction activities associated with the proposed Westgate Building 4 project. As shown in Table G, total GHG emissions from construction activities are projected to

be 1,731 CO_2e, and amortized over 30 years at 58 CO_2e. Therefore, construction of the proposed Westgate Building 4 project will not exceed the SCAQMD stationary source threshold for industrial uses.

Table G: Construction Greenhouse Gas Emissions

Construction Phase		Total Regional Pollutant Emissions (MT/yr)			
		CO_2	CH_4	N_2O	CO_2e
2017	Demolition	44	0.01	0	44
	Site Preparation	19	<0.01	0	19
	Grading	89	0.03	0	90
	Building Construction	981	0.10	0	984
	Architectural Coating	37	<0.01	0	38
2018	Building Construction	484	0.05	0	485
	Paving	22	<0.01	0	22
	Architectural Coating	49	<0.01	0	49
Total Construction Emissions		**1,726**	**0.20**	**0**	**1,731**
SCAQMD stationary source threshold for industrial uses					**10,000**
Significant Emissions?					**No**
Amortized over 30 years		**58**	**<0.01**	**0**	**58**

Source: Compiled by LSA Associates, Inc. (October 2016).
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/yr = metric tons per year
N_2O = nitrous oxide

Operational Emissions. The original 1995 EIR concluded that CO, NOx, ROG, and PM_{10} emissions from project operation would be significant even after implementation of all feasible mitigation; therefore, a Statement of Overriding Considerations (SOC) was adopted as part of the EIR certification in 1995. The 2007 SPA and EIR addendum confirmed that the revised development plan for the SBACSP would still be significant for air pollutants.

Table H summarizes the potential “worst case” air pollutant emissions from the proposed Westgate Building 4 project based on the latest CalEEMod computer model compared to the daily significance thresholds for criteria air pollutants promulgated by the South Coast Air Quality Management District (SCAQMD)(LSA Associates, October 2016). Using a 40-mile trip length, the expected long-term emissions of the Westgate project would be well below the applicable SCAQMD significance thresholds with the exception of nitrogen oxide (NO_x) emissions, which would exceed the SCAQMD threshold. Table H also shows air pollutant emissions from the existing warehouses which would be demolished when the Westgate project is developed.

As stated previously, the original 1995 EIR concluded that CO, NO_x, ROG, and PM_{10} emissions from project operation would be significant even after implementation of all feasible mitigation, and a Statement of Overriding Considerations (SOC) was adopted as part of the EIR certification in 1995. The 2007 SPA and EIR addendum confirmed that the revised development plan for the SBACSP would still be significant for air pollutants.

Table H: Operational Air Pollutant Emissions

Activity	Pollutant Emissions (lbs/day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area Sources	11	<0.01	0.05	0.0	<0.01	<0.01
Energy Sources	0.03	0.26	0.22	<0.01	0.02	0.02
Mobile Sources	4.2	69	79	0.39	25	7.0
Off-road Sources	1.1	10	8.4	0.01	0.78	0.72
Total Project Emissions	**16**	**79**	**88**	**0.39**	**26**	**7.7**
SCAQMD Thresholds	**55.0**	**55.0**	**550.0**	**150.0**	**150.0**	**55.0**
Significant?	**No**	**Yes**	**No**	**No**	**No**	**No**
Existing Warehouses	**18.0**	**34.0**	**69.0**	**0.2**	**12.0**	**3.7**

Source: LSA Associates, Inc. October 2016 calculations using CalEEMod.

CO = carbon monoxide
CO_2 = carbon dioxide
lbs/day = pounds per day
NO_x = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic gas
SCAQMD = South Coast Air Quality Management District
SO_x = sulfur oxides

As detailed in Table H, the proposed Westgate Building 4 project would exceed the SCAQMD threshold for NO_X emissions. However, this impact was previously addressed in the original 1995 EIR and 2007 SPA and EIR addendum. The proposed Westgate Building 4 project (476,604 square feet) plus the remaining existing development (total of 2,573,184 square feet) is only 77 percent of the square footage approved for the entire Westgate area under the 2015 EIR Addendum No. 6 for the Westgate project (3,327,984 square feet). Therefore, it is reasonable to conclude that the currently proposed development will have less air pollution impacts related to these criteria pollutants. Based on this, the SOC is still applicable to the overall SBACSP project, which includes the Westgate project, approved in 2007.

Localized Significance Analysis. Table I shows the calculated emissions for the proposed construction and operational activities compared with the appropriate LSTs issued by the SCAQMD. The LST analysis only includes onsite sources; however, the CalEEMod model outputs do not separate onsite and offsite emissions for mobile sources. For a worst-case scenario assessment, the emissions shown in Table H include all onsite project-related stationary sources and 15 percent of the project-related new mobile sources, which is an estimate of the amount of project-related new vehicle traffic that will occur on site. Table I shows that the operational emission rates would not exceed the LST for receptors at the closest residences (i.e., worst case to sensitive receptors) is approximately 200 feet southwest and north of the site. Therefore, the proposed construction and operational activities would not result in a localized significant air quality impact.

Table J details GHG emissions projected to be generated from operational activities associated with the proposed Westgate Building 4 project. As shown in Table J, total GHG emissions from operational activities are projected to be 7,816 CO_2e per year. This analysis utilizes the SCAQMD stationary source threshold for industrial uses, at 10,000 CO_2e, so the proposed Westgate Building 4 project, projected to emit 7,816

CO_2e per year, is not expected to exceed the SCAQMD stationary source threshold for industrial uses.

Table I: Long-Term Operational LST numbers (lbs/day)

Emissions Sources	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction Emissions	75.0	49.0	21.0	13.0
LST Thresholds	340.0	3,269.0	55.0	14.0
Significant Construction Emissions?	**No**	**No**	**No**	**No**
Operational Emissions	3.3	8.0	1.4	0.4
LST Thresholds	340.0	3,269.0	14.0	4.0
Significant Operational Emissions?	**No**	**No**	**No**	**No**

Source: LSA Associates, Inc. October 2016 using CalEEMod.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Table J: Operational Greenhouse Gas Emissions

Source	Pollutant Emissions, MT/year					
	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e
Construction emissions amortized over 30 years	0	39	39	<0.01	0	39
Operational emissions						
Area	0	0.01	0.01	<0.01	0	0.01
Energy	0	526	526	0.02	<0.01	528
Mobile	0	6,284	6,284	0.22	0	6,289
Off-road	0	126	126	0.04	0	127
Waste	91	0	91	5.4	0	225
Water	35	457	492	3.6	0.09	609
Total Project Emissions	**126**	**7,431**	**7,557**	**9.3**	**0.09**	**7,816**
SCAQMD stationary source threshold for industrial uses						**10,000**
Significant Emissions?						**No**

Source: Compiled by LSA Associates, Inc. (October 2016).
Bio-CO_2 = biologically generated CO_2
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT = metric tons
N_2O = nitrous oxide
NBio-CO_2 = Non-biologically generated CO_2

In 2006, when the CEQA process started for the SBACSP amendment, GHG emissions were not required to be included in CEQA documents as their local impacts were considered to be too speculative, and there were no officially established significance thresholds for GHGs. The body of knowledge on this issue has expanded since that time, and the State passed AB 32 and SB 375 to help control these emissions. However, the project's original CEQA document was not required to address GHG emissions, and the courts have found that subsequent documents are not required to examine GHG emissions if it was not examined in the original document as outlined in the 2008 Riverside County Superior Court Case 460950 titled *Highland Springs Conference and Training Center v. City of Banning* (also known as the "Black Bench" case).

In addition, a review of the URBEMIS database from the 1995 and 2007 analyses indicates that CO_2e emissions would have been similar in scope to the criteria air pollutant

emissions, which were well over the SCAQMD daily thresholds. It can be reasonably assumed that, if GHG emissions would have been required to be evaluated at that time, the Statement of Overriding Considerations adopted to cover significant air quality impacts would have applied to GHG emissions as well. Table J shows that operation of the proposed Westgate Building 4 development would generate 7,816 tons of CO_2e each year based on the latest CalEEMod computer program managed by the SCAQMD, which would not exceed the SCAQMD stationary source threshold for industrial uses of 10,000 tons of CO_2e each year. Additionally, the proposed Westgate Building 4 project (476,604 square feet) plus the remaining existing development (total of 2,573,184 square feet) is only 77 percent of the square footage approved for the entire Westgate area under the 2015 EIR Addendum No. 6 for the Westgate project (3,327,984 square feet). Therefore, it is reasonable to conclude that GHG emissions from the proposed Westgate Building 4 Project are fewer than they would have been under the scope approved for the entire Westgate area under the 2015 EIR Addendum No. 6 for the Westgate project (3,327,984 square feet).

All of the mitigation measures previously identified will help reduce GHG emissions during construction (Measures AQ-1 through AQ-8) and occupancy (Measures AQ-9 through AQ-18) and will also help substantially reduce GHG emissions on a cumulative basis. It should also be noted that the proposed development will have to comply with the new California ("Green") Building Code and the City's water efficient landscaping requirements, which will help to further reduce project-related GHG emissions. For these reasons, no additional mitigation measures are proposed in this regard.

The current development proposal for the Westgate area is smaller and consistent with the approved development for the Westgate area under the SBCASP and the EIR. With implementation of the previously approved mitigation measures, air quality impacts of the current development proposal would be less than significant and generally consistent with those identified in the original 1995 EIR.

4. Biological Resources

The 2007 IS concluded that potential impacts to biological resources from construction and development of the Westgate portion of the revised SBACSP would be less than significant due to the disturbed nature of the site and lack of significant biological resources. In addition, the 1995 EIR concluded the Westgate site did not contain any listed or sensitive biological species or contain any significant biological habitat. The current site is largely covered by improved surfaces and no native habitat remains. Therefore, impacts of the proposed Westgate Building 4 development plan would be less than significant and only the following mitigation measures are needed to reduce the potential for any impacts to burrowing owls or nesting birds that may inhabit the Westgate property at the time of development:

BR-1 To ensure direct mortality of burrowing owls is avoided, a pre-construction survey will be conducted within 30 days prior to ground disturbance at the site. The pre-construction survey shall be prepared by a qualified biologist and

submitted to the City. This survey shall be required and conducted no more than 30 days prior to initiation of ground-disturbing activities. If construction is to be initiated during the breeding season (February 1 through August 31) and burrowing owl is determined to occupy any portion of the study area during the 30-day pre-construction survey, consultation with the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) shall take place and no construction activity shall take place within 500 feet of an active nest/burrow until it has been determined that the nest/burrow is no longer active and all juveniles have fledged the nest/burrow. No disturbance to active burrows shall occur without appropriate permitting through the USFWS and/or CDFW.

If active burrowing owl burrows are detected outside the breeding season (September through January), or within the breeding season but owls are not nesting or in the process of nesting, passive relocation may be conducted following consultation with the CDFW and USFWS. Construction activity may not occur within 500 feet of the active burrow.

If active nests are identified in a development area, the nests shall be avoided or the owls actively or passively relocated to the onsite open space area (Planning Area 6) or an appropriate offsite location, to the satisfaction of the USFWS or the CDFW.

To avoid active nests adequately, no grading or heavy equipment activity shall take place within 250 feet of an active nest during the breeding season (February 1 through August 31) and 160 feet during the non-breeding season. This measure shall be implemented to the satisfaction of the City Planning Department.

If active burrowing owl burrows are detected outside the breeding season, passive and/or active relocation may be undertaken following consultation with and approval by the CDFW and/or USFWS. One-way doors may be installed as part of a passive relocation program. Burrowing owl burrows shall be excavated with hand tools by a qualified biologist when determined to be unoccupied, and back filled to ensure that animals do not re-enter the holes/dens. This measure shall be implemented to the satisfaction of the City Planning Department.

BR-2 Pursuant to the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (CFGC), site preparation activities (removal of trees and vegetation) shall be avoided during the nesting season of potentially occurring native and migratory bird species. Any construction activities that occur during the nesting season (February 15 to August 31 for songbirds; January 15 to August 31 for raptors) in the trees and shrubs will require that all potential habitat be thoroughly surveyed for the presence of nesting birds by a qualified biologist before commencement of clearing. If any active nests are detected, then a buffer of at least 300 feet (500 feet for raptors) will be delineated, flagged, and avoided until

the nesting cycle is complete as determined by the biological monitor to minimize impacts. In the event such species are identified within the limits of ground disturbance, Mitigation Measure BR-3 shall also apply. This measure shall be implemented to the satisfaction of the City Planning Department.

BR-3 If it is determined that project-related grading or construction will affect nesting special status avian species, no grading or heavy equipment activity shall take place within the limits established in BR-2 until it has been determined by a qualified biologist that the nest/burrow is no longer active, and all juveniles have fledged the nest/burrow. This measure shall be implemented to the satisfaction of the City Planning Department.

The current development proposal for the Westgate area is smaller than the approved development plan for the Westgate area under the SBCASP and the EIR. With implementation of these measures, biological impacts of the current development proposal would be less than significant and generally consistent with those identified in the Original 1995 EIR.

5. Cultural Resources

The 1995 EIR and 2007 IS concluded that the SBACSP property did not contain significant cultural resources, so impacts of its development would be less than significant without mitigation. The current development proposal for the Westgate area is equivalent to and consistent with the development configuration of the approved development plan under the SBCASP and the EIR. Therefore, no mitigation is needed or proposed for this development proposal.

6. Geology and Soils

The 1995 EIR and 2007 IS concluded that the SBACSP property did not contain significant geologic or soil constraints, and potential impacts would be less than significant with implementation of the following Mitigation Measures 1-1 and 1-2 outlined in the 1995 EIR (see Appendix D):

1-1 Conduct location-specific geotechnical studies for building foundations.

1-2 Minimize dust and soil erosion.

In addition, compliance with the City's development review process involving grading and soils, as outlined in the following Conditions of Approval from EIR Addendum No. 6, would reduce potential earth-related impacts of the development plans for the Southgate property and are also applicable to the current Westgate proposal:

<u>2. Grading and Landscaping</u>

a) The site/plot/grading and drainage plan shall be signed by a Registered Civil Engineer and a grading permit will be required. The grading plan

shall be prepared in strict accordance with the City's "Grading Policies and Procedures" and the City's "Standard Drawings," unless otherwise approved by the City Engineer.

b) If more than 5 trees are to be removed from the site, a tree removal permit conforming to the requirements of Section 19.28.090 of the Development Code shall be obtained from the Department of Development Services-Planning Division prior to issuance of any grading or site development permits.

c) A grading bond will be required and the grading shall be supervised in accordance with Section 3317.2 of the California Building Code.

d) If more than 1,000 cubic yards of earth is to be hauled on City streets then a special hauling permit shall be obtained from the City Engineer. Additional conditions, such as truck route approval, traffic controls, bonding, covering of loads, street cleaning, etc. may be required by the City Engineer.

e) A liquefaction evaluation is required for the site. This evaluation must be submitted and approved prior to issuance of a grading permit. Any grading requirements recommended by the approved liquefaction evaluation shall be incorporated in the grading plan.

f) An on-site Improvement Plan is required for this project. Where feasible, this plan may be incorporated with the grading plan and shall conform to all requirements of Section 15.04-167 of the Municipal Code (See "Grading Policies and Procedures").

The current development proposal for the Westgate area is smaller than the approved development plan for the Westgate area under the SBCASP and the EIR, with implementation of the mitigation measures approved in the 1995 EIR and the City's standard conditions of approval geology and soils impacts of the current development proposal would be less than significant and generally consistent with those identified in the Original 1995 EIR.

7. Hazards and Hazardous Materials

The 2007 IS indicated that the entire project area north of the adjacent Santa Ana River was once part of the Norton Air Force Base (NAFB). The base was closed in 1995, but a number of locations on the base were found to be contaminated by a variety of hazardous materials, however, none of the specifically identified hazmat locations are on the Westgate Building 4 property. The overall former NAFB site has potentially significant impacts related to being included on the State's "Cortese List" (Government Code Section 65962.5) of identified hazmat sites. However, the 2007 IS concluded that impacts related to hazardous materials on the Westgate portion of the revised SBACSP could be reduced

to less than significant levels by implementation of the following measures from EIR Addendum No. 6:

6-1 Prior to the approval of any grading permit or building permit within the project area, the applicant shall provide written evidence to the Planning and Building Services Director, City of San Bernardino, that the Air Force has released the site for development, and that the proposed development will not hinder the efforts to clean up the trichloroethylene (TCE) groundwater plume identified beneath and down gradient of the former Norton Air Force Base (NAFB) site.

The current development proposal for the Westgate Building 4 area is smaller than the approved development plan for the Westgate area under the SBCASP and the EIR. The project-specific Phase 1 Environmental Site Assessment concluded the Westgate Building 4 project site does not contain any Recognized Environmental Conditions (RECs) or Controlled RECs (Appendix A). With implementation of the previously approved and new mitigation measures outlined above, potential impacts related to hazardous materials will be reduced to less than significant levels, consistent with the 1995 EIR and 2007 IS.

8. Hydrology and Water Quality

The 2007 IS concluded that potential impacts to hydrology, flooding, erosion, and water quality from construction and development of the Westgate portion of the revised SBACSP could be reduced to less than significant levels by implementation of the following mitigation measures 2-1 through 2-3 in the 1995 EIR (see Appendix D):

2-1 Comply with latest California Building Code standards for water conservation.

2-2 Comply with City's NPDES water quality permitting requirements.

2-3 Comply with City's flood protection requirements.

In addition, compliance with the City's development review process involving water quality, as outlined in the following Conditions of Approval from EIR Addendum No. 6, would reduce potential water-related impacts of the current development plans for the Westgate property:

<u>1. Drainage and Flood Control</u>

a) All necessary drainage and flood control measures shall be subject to requirements of the City Engineer, which may be based in part on the recommendations of the San Bernardino County Flood District. The developer's Engineer shall furnish all necessary data relating to drainage and flood control.

b) A permit will be required from the Department of Transportation and Flood Control, if any work is required within the Flood Control District's right-of-way.

c) A local drainage study will be required for the project. Any drainage improvements, structures, or storm drains needed to mitigate downstream impacts or protect the development shall be designed and constructed at the developer's expense, and right-of-way dedicated as necessary. Release of drainage shall be at locations and under conditions acceptable to the City Engineer and any other agency having jurisdiction.

d) In addition to the drainage study mentioned in the previous condition, the developer's engineer shall submit a separate drainage study specific to each parcel as a part of that parcel's development plan submittal.

e) The detention basins shall be designed in accordance with "Detention Basin Design Criteria for San Bernardino County."

f) The development is partially located within Zone X (shaded) on the Federal Flood Insurance Rate Maps and may be subject to sheet overflow to a depth of less than 1 foot in a 100-year storm. Therefore, all building pads shall be raised above the surrounding area as approved by the City Engineer.

g) All drainage from the development shall be directed to an approved public drainage facility. If not feasible, proper drainage facilities and easements shall be provided to the satisfaction of the City Engineer.

h) If site drainage is to outlet into the public street, the drainage shall be conveyed through a parkway culvert constructed in accordance with City Standard No. 400. Conveyance of site drainage over the Driveway approaches will not be permitted.

i) A Water Quality Management Plan (WQMP) is required for this project. The applicant is directed to the City's web page at www.ci.san-bernardino.ca.us – Departments – Development Services – Public Works for templates to use in the preparation of this plan.

j) A Storm Water Pollution Prevention Plan (SWPPP) will be required. The applicant is directed to the City's web page at www.ci.san-bernardino.ca.us – Departments – Development Services – Public Works for templates to use in the preparation of this plan.

k) The City Engineer prior to issuance of a grading permit shall approve the WQMP and the SWPPP.

l) A "Notice of Intent (NOI)" shall be filed with the State Water Resources Control Board for construction disturbing 1 acre or more of land (including the project area, construction yards, storage areas, etc.).

m) The City Engineer, prior to grading plan approval, shall approve an Erosion Control Plan. The plan shall be designed to control erosion due to water and

wind, including blowing dust, during all phases of construction, including graded areas which are not proposed to be immediately built upon.

The current development proposal for the Westgate area is less than the approved development plan under the SBCASP, with implementation of the previously approved mitigation measures and conditions of approval, potential impacts will be equivalent to those identified in the SBCASP EIR and less than significant.

9. Land Use and Planning

The 2007 IS indicated that the proposed amendments to the SBACSP would reduce the total development potential of the entire SBACSP from 14 million square feet to 11.6 million square feet, or a reduction of approximately 17 percent, including 3.3 million square feet for the Westgate portion of the SBACSP. The IS concluded that potential impacts to land use and planning from construction and development of the Westgate portion of the revised SBACSP could be reduced to less than significant levels by implementation of the following mitigation measure:

LU-1 Prior to issuance of any building permits, the developer shall demonstrate that the entire specific plan development is within a buildout limit of 11.6 million square feet. This measure shall be implemented to the satisfaction of the City Planning Director.

The current development proposal for the Westhgate area is considerably smaller (77%) than the approved development plan under the SBCASP and the EIR. With implementation of the previously approved mitigation measures, potential land use and planning impacts of the current Westgate Building 4 development proposal will be less than significant and consistent with the 1995 EIR and the 2007 IS.

10. Mineral Resources

The 1995 EIR and the 2007 IS concluded that the SBACSP property did not contain significant mineral resources that were accessible for extraction, so impacts would be less than significant without mitigation. The current development proposal for the Westgate area is equivalent to and consistent with the development configuration of (i.e., building footprints and heights) the approved development plan under the SBCASP and the EIR; therefore, there would be no significant impacts related to mineral resources.

11. Noise

The 1995 EIR and the 2007 IS concluded that potential noise impacts from construction and development of the Westgate portion of the revised SBACSP could be reduced to less than significant levels by implementation of mitigation measures 8-1 through 8-6 in the 1995 EIR (see Appendix D), as summarized below:

8-1 Restriction of construction hours per City noise ordinance.

8-2 Maintain mufflers on all construction equipment within manufacturer's specs.

8-3 Stage construction activities away from occupied uses.

8-4 Construct temporary noise barriers where appropriate.

8-5 Utilize equipment with low noise levels.

8-6 Concentrate noisy activities to minimize the duration of impacts.

The Westgate planning area is proximate to residential land uses and other occupied uses to the north and southwest, but no other mitigation measures are required to further reduce potential noise impacts. The current development proposal for the Westgate area is 23 percent smaller than the approved development plan for the Westgate area under the SBCASP and the EIR, with implementation of the previously approved mitigation measures. With implementation of the measures identified above, noise impacts of the current development proposal would be less than significant and consistent with those identified in the 1995 EIR.

12. Population and Housing

The 1995 EIR and the 2007 IS concluded that the SBACSP project would not generate significant amounts of new population or housing within the City, but would depend more on the existing regional workforce. The EIR and IS concluded that impacts in this regard would be less than significant without mitigation. The current development proposal for the Westgate area is smaller than the approved development plan under the SBCASP and the EIR (with the approved EIR addenda). Therefore, population and housing impacts of the current development proposal would be less than significant and consistent with those identified in the 1995 EIR.

13. Public Services

The 1995 EIR and the 2007 IS concluded that potential impacts to public services (e.g., police and fire) from construction and development of the Westgate portion of the revised SBACSP could be reduced to less than significant levels by implementation of the mitigation measures 10-1 through 10-8 in the 1995 EIR (see Appendix D) summarized below:

10-1 Pay fair-share capital improvement costs for police and fire services.

10-2 Coordinate building design and night lighting for security.

10-3 Future development to document any need for additional water facilities.

10-4 Future development to document any need for additional sewer facilities.

10-5 Coordinate design of onsite sewer system with City Public Works Department.

10-6 Develop and implement a Facilities Repair and Maintenance Plan.

10-7 Coordinate future solid waste collection service with City.

10-8 Coordinate final design plans with local utility providers.

It should be noted that these measures also apply to all SBACSP planning areas, and no other mitigation measures are required to further reduce potential public service impacts. The current development proposal for the Westgate area is 23 percent smaller than the approved development plan for the Westgate area under the SBCASP and the EIR. With implementation of the previously approved mitigation measures, public service impacts of the current Westgate Building 4 development proposal will be less than significant and similar to those identified in the 1995 EIR.

14. Recreation

The 1995 EIR and the 2007 IS concluded that the SBACSP project would not generate significant new demand for recreational facilities or services within the City. The EIR and IS concluded impacts in this regard would be less than significant without mitigation. The current development proposal for the Westgate area is smaller than the approved development plan for the Westgate area under the SBCASP and the EIR. Therefore, recreation impacts will be less than significant and consistent with the conclusions of the 1995 EIR.

15. Transportation/Traffic

A project-specific Traffic Impact Assessment was prepared by Translutions, Inc. (TI) in October 2016. Table K, *Westgate Building 4 Project Trip Generation*, details the projected vehicular trips generated by the proposed Westgate Building 4 project. Table K indicates the proposed Westgate Building 4 project would generate 801 vehicle trips. In addition to gross trips, the TI study converted vehicle trips to passenger car equivalent (PCE)[1] trips per day to account for the larger size of multi-axle trucks on the roads compared to passenger vehicles. The TI study indicates the Westgate project would generate 1,324 net new PCE trips (see Table K).

The TI study (see Appendix E) estimated level of service (LOS) impacts at the following eleven (11) local intersections to determine if the proposed Westgate Building 4 project would result in any significant traffic impacts:

1) Interstate 215 (I-215) Southbound (SB) Ramps and Inland Center Drive
2) I-215 Northbound (NB) Ramps and Inland Center Drive
3) I-215 NB Ramps and Mill Street
4) S E Street/ Inland Center Drive and W Mill Street
5) S Arrowhead Avenue and W Mill Street
6) S Waterman Avenue and E Mill Street
7) Lena Road and E Mill Street
8) Tippecanoe Avenue and E Mill Street
9) Lena Road and Project North Driveway
10) Lena Road and Project Central Driveway
11) Lena Road and Project South Driveway

[1] PCE equates trucks and cars by taking into account the truck's larger size (i.e., 1 truck is equal to 2.0 passenger cars).

Table K: Westgate Building 4 Project Trip Generation

Land Use: 477 TSF Warehouse	A.M. Peak Hour			P.M. Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Trips/Unit (Cars)	0.047	0.021	0.068	0.023	0.051	0.074	1.040
Trips/Unit (2-Axle Trucks)	0.010	0.004	0.014	0.005	0.011	0.015	0.217
Trips/Unit (3-Axle Trucks)	0.016	0.007	0.024	0.008	0.018	0.026	0.363
Trips/Unit (4+ Axle Trucks)	0.052	0.024	0.076	0.026	0.057	0.083	1.159
Trips/Unit (Total)	0.125	0.056	0.182	0.062	0.137	0.198	2.779
Trip Generation (Cars)	22	10	32	11	24	35	496
Trip Generation (2-Axle Trucks)	2	1	3	1	3	4	52
Trip Generation (3-Axle Trucks)	4	1	5	2	3	5	69
Trip Generation (4+ Axle Trucks)	8	4	12	4	9	13	184
Trip Generation (Total)	**36**	**16**	**52**	**18**	**39**	**57**	**801**
Trip Generation (Cars)	22	10	32	11	24	35	496
PCE Trip Generation (2-Axle Trucks)	5	2	7	2	5	7	103
PCE Trip Generation (3-Axle Trucks)	7	4	11	3	9	12	173
PCE Trip Generation (4+ Axle Trucks)	25	11	36	12	27	39	552
PCE Trip Generation (Total)	37	17	54	17	41	58	828
Total PCE Trips	**59**	**27**	**86**	**28**	**65**	**93**	**1,324**

TSF = Thousand Square Feet
Source: 2016 Translutions Traffic Study (Appendix E)

Tables L and M show the results of the TI traffic study which determined the proposed Westgate Building 4 project would not result in any significant delay or level of service impacts at any of the 11 area intersections (i.e., no intersections exceeding LOS D during one or more peak hour periods), either during the opening year or opening year plus other project traffic – cumulative) with the exception of the intersection of I-215 Northbound Ramps/Mills Street which currently operates at LOS D during the p.m. peak hour but would operate at LOS E during the p.m. peak hour during opening year and opening year plus project; however, the project-related increase in vehicle-to-capacity (v/c) ratio at this intersection is less than the threshold established by the City of San Bernardino.[2] Therefore, the TI concluded the proposed Westgate Building 4 project would have no significant transportation-related impacts (Appendix E).

[2] The City of San Bernardino identifies significant impacts based on a sliding scale using vehicle-to-capacity ratios (v/c). Specifically, when the pre-project LOS is LOS C, the project is allowed to increase the v/c by 0.04, if the LOS is D the project is allowed to increase the v/c by 0.02, and if the pre-project LOS are E or F, the project is allowed to increase the v/c by 0.01. A significant impact occurs if the project related increase in v/c is greater than those listed above.

Table L: Westgate Building 4 Levels of Service (LOS) Impacts – Opening Year

Intersection	Without Project						With Project					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS
1. I-215 SB Ramps and Inland Center Drive	27.9	0.42	C	30.5	0.53	C	28	0.42	C	30.8	0.54	C
2. I-215 NB Ramps and Inland Center Drive	25.5	0.53	C	29.6	0.52	C	25.6	0.54	C	29.6	0.53	C
3. I-215 NB Ramps and Mill Street	**31.4**	**0.48**	**C**	**55.3**	**0.62**	**E**	**31.5**	**0.48**	**C**	**59.4**	**0.62**	**E**
4. S E Street/ Inland Center Drive and W Mill Street	46.9	0.69	D	44	0.81	D	47.4	0.71	D	44.8	0.82	D
5. S Arrowhead Avenue and W Mill Street	23.1	0.44	C	27.6	0.54	C	22.7	0.45	C	27.7	0.54	C
6. S Waterman Avenue and E Mill Street	33.8	0.6	C	37.3	0.62	D	34.1	0.6	C	36.7	0.63	D
7. Lena Road and E Mill Street	26	0.35	C	23.4	0.41	C	25.6	0.38	C	23.2	0.43	C
8. Tippecanoe Avenue and E Mill Street	26.6	0.6	C	22.9	0.58	C	28.4	0.62	C	23.4	0.58	C
9. Lena Road and Project North Driveway	Future Project Driveway								A	10.3		B
10. Lena Road and Project Central Driveway	Future Project Driveway								A	10.4		B
11. Lena Road and Project South Driveway	Future Project Driveway								A	10.6		B

Source: 2016 Translutions Traffic Study (Appendix E)

Table M: Westgate Building 4 Levels of Service (LOS) Impacts – Cumulative Conditions

Intersection	Without Project						With Project					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS
1. I-215 SB Ramps and Inland Center Drive	28.1	0.42	C	30.9	0.54	C	28.2	0.43	C	31.2	0.55	C
2. I-215 NB Ramps and Inland Center Drive	25.8	0.53	C	29.7	0.52	C	25.9	0.55	C	29.7	0.53	C
3. I-215 NB Ramps and Mill Street	**31.4**	**0.49**	**C**	**63.1**	**0.63**	**E**	**31.4**	**0.49**	**C**	**60.5**	**0.64**	**E**
4. S E Street/ Inland Center Drive and W Mill Street	50.1	0.77	D	47.2	0.85	D	53.8	0.79	D	49.2	0.87	D
5. S Arrowhead Avenue and W Mill Street	11.8	0.46	B	27.8	0.55	C	11.2	0.46	B	27.6	0.56	C
6. S Waterman Avenue and E Mill Street	34.8	0.61	C	37.5	0.65	D	35.1	0.62	D	37.9	0.65	D
7. Lena Road and E Mill Street	25.3	0.36	C	22.5	0.42	C	24.9	0.39	C	22.5	0.45	C
8. Tippecanoe Avenue and E Mill Street	29.6	0.63	C	24.1	0.6	C	31.7	0.64	C	24.7	0.61	C
9. Lena Road and Project North Driveway	Future Project Driveway						10.8		B	10.3		B
10. Lena Road and Project Central Driveway	Future Project Driveway						10.8		B	10.4		B
11. Lena Road and Project South Driveway	Future Project Driveway						11.1		B	10.6		B

Source: 2016 Translutions Traffic Study (Appendix E)

The 1995 EIR and 2007 IS concluded that potential traffic and transportation-related impacts from construction and development of the Westgate portion of the revised SBACSP could be reduced to less than significant levels by implementation of the following mitigation measure but modified to account for current conditions and studies:

TR-1 The project proponent shall contribute toward the cost of necessary study area improvements on a fair-share basis. Fair-share contributions shall be paid with sufficient time to allow for improvements to be implemented in advance of the

time needed to mitigate impacts. Payment schedule of fair-share costs will be determined by the City Public Works Director prior to issuance of building permits (this is an expansion of Mitigation Measure 7-1 from the 1995 EIR).

Note that funding from various sources (Federal, SANBAG, and Measure I) has been secured and allotted for roadway improvements in and around the SBACSP area. Therefore, the developer(s) may be exempt from certain fair-share improvements if those improvements have already been financed through the aforementioned sources. It shall be the responsibility of the developer to either pay their fair share or provide verification that the affected roadway improvements have been financed through outside sources and that the improvements are scheduled for implementation, prior to issuance of building permits. This measure shall be implemented to the satisfaction of the City Public Works Director.

Based on the project-specific TI traffic study, the proposed Westgate Building 4 project will not result in any significant transportation-related impacts. The LOS at the intersection of I-215 NB Ramps and Mill Street operates at unsatisfactory conditions under all analysis scenarios, but the project-related increase in vehicle-to-capacity (v/c) ratio at this intersection is less than the threshold established by the City of San Bernardino.

Mitigation Measure TR-1 shall be implemented to contribute fair share monetary contributions, as applicable, to the improvement of the I-215 NB Ramps/Mill Street intersection in accordance with the project-specific TI traffic study (Appendix E).

Compliance with the City's development review process, as outlined in the following Conditions of Approval, would help further reduce potential traffic onsite and offsite traffic impacts of the current development plans for the Westgate Building 4 property:

<u>6. Street Improvement and Dedications</u>

a) All public streets and public easements within and adjacent to the development shall be improved to include combination curb and gutter, paving, access ramps, street lights, sidewalks, and appurtenances, including, but not limited to traffic signals, traffic signal modifications, relocation of public or private facilities which interfere with new construction, striping, and landscaping and irrigation in the landscape maintenance district shall be accomplished in accordance with the City of San Bernardino "Design Policies and Procedures" and City "Standard Drawings," unless otherwise approved by the City Engineer. Street lighting shall be designed and constructed in accordance with the City's "Street Lighting Policies and Procedures." Street lighting shall be shown on street improvement plans except where otherwise approved by the City Engineer.

b) Dedication of adequate street right-of-way (R.W.) to provide the distance from street centerline to property line and placement of the curb line (C.L.) in relation to the street centerline.

c) Construct 8” Curb and Gutter per City Standard No. 200 adjacent to the site along Second Street. Widen pavement adjacent to the site to match new curb and gutter. Construct approach and departure transitions for traffic safety and drainage as approved by the City Engineer.

d) Construct sidewalk adjacent to the site in accordance with City Standard No. 202, Case “A” (6’ wide adjacent to curb). Sidewalk shall be constructed on the north side of Mill Street.

e) Construct accessible curb ramps in accordance with City Standard No. 205, modified as approved by the City Engineer to comply with current ADA accessibility requirements, at all curb returns within and adjacent to the project site. Dedicate sufficient right-of-way at the corner to accommodate the ramp.

f) Construct Driveway Approaches per City Standard No. 204, Type II, including an accessible by-pass around the top of the drive approach. Remove existing driveway approaches that are not part of the approved plan and replace with full height curb and gutter and sidewalk. Radius type drive approaches may be constructed, if desired. Complete design shall be shown on the on-site development plan. A strip of textured/colored concrete 20’ wide shall be constructed in the throat of the driveway.

g) All curb return radii shall be 25 feet minimum.

h) Curb return radius at the intersection of Mill Street with Lena Road shall be 35 feet unless otherwise approved by the City Engineer.

i) The pavement on Mill Street and Lena Road adjoining the site shall be rehabilitated to centerline using a strategy approved by the City Engineer.

j) Install streetlights adjacent to the site in accordance with City Standard Nos. SL-1 and SL-2.

k) Two independent means of access 24 feet wide, paved and dedicated, shall be provided to the project. Additional width may be required for drainage control and traffic safety, except as approved by a variance.

This project is subject to fair-share contributions toward improvements needed to mitigate project-related traffic impacts. The fair-share contributions shall be submitted to the City prior to any building permit issuance. The current development proposal for the Westgate Building 4 area is smaller than the approved development plan under the SBCASP and the EIR. With implementation of the previously approved mitigation measures and conditions of approval, the current Westgate Building 4 development proposal will have less than significant traffic impacts, consistent with the 1995 EIR and 2007 IS.

16. Utilities and Service Systems

The 2007 IS indicated that the proposed amendments to the SBACSP would reduce the total development potential of the entire SBACSP plan from 14 million square feet to 11.6 million square feet, or a reduction of approximately 17 percent. It concluded that potential impacts to utilities and service systems from construction and development of the Southgate portion of the revised SBACSP could be reduced to less than significant levels by implementation of the following mitigation measures:

U-1 As future tenants are identified, the developer and/or future tenants shall coordinate with local utility providers relative to site planning and the payment of impact fees to help assure the project does not negatively affect utility services or agencies. This measure shall be implemented to the satisfaction of the Planning and Public Works Directors.

U-2 As future tenants are identified, such future tenants shall coordinate with County solid waste relative to site planning and the payment of impact fees to help assure the project does not negatively affect County solid waste services or area landfills. This measure shall be implemented to the satisfaction of the Planning and Public Works Directors.

In addition, compliance with the City's development review process, as outlined in the following Conditions of Approval, would help further reduce potential utility impacts of the current development plans for the Westgate property under EIR Addendum No. 6:

<u>3. Utilities</u>

a) Design and construct all public utilities as necessary to serve the site in accordance with City Code, City Standards and requirements of the serving utility, including gas, electric, telephone, water, sewer and cable TV (Cable TV optional for commercial, industrial, or institutional uses).

b) Each parcel shall be provided with separate water and sewer facilities so the City or the agency providing such services in the area can serve it.

c) Backflow preventers shall be installed for any building with the finished floor elevation below the rim elevation of the nearest upstream manhole.

d) Sewer main extensions required to serve the site shall be constructed at the Developer's expense.

e) This project is located in the sewer service area maintained by the City of San Bernardino; therefore, any necessary sewer main extension shall be designed and constructed in accordance with the City's "Sewer Policy and Procedures" and City Standard Drawings.

f) Utility services shall be placed underground and easements provided as required.

g) A street cut permit, from the City Engineer, will be required for utility cuts into existing streets if any are required.

h) All existing overhead utilities adjacent to or traversing the site on either side of the street shall be undergrounded in accordance with Section 19.20.030 (non-subdivisions) or Section 19.30.110 (subdivisions) of the Development Code.

i) Existing Utilities which interfere with new construction shall be relocated at the Developer's expense as directed by the City Engineer, except overhead lines, if required by provisions of the Development Code to be undergrounded. See Development Code Section 19.20.030 (non-subdivisions) or Section 19.30.110 (subdivisions).

j) Sewers within private streets or private parking lots will not be maintained by the City but shall be designed and constructed to City Standards and inspected under a City On-Site Construction Permit. A private sewer plan designed by the Developer's Engineer and approved by the City Engineer will be required. This plan can be incorporated in the on-site development plan, where practical.

The current development proposal for the Westgate area is smaller than the approved development plan for the Westgate area under the SBCASP and the EIR. With implementation of the previously approved mitigation measures and conditions of approval, the current Westgate Building 4 development proposal will have less than significant utility impacts, consistent with the 1995 EIR and 2007 IS.

17. Mandatory Findings of Significance

The 2007 IS indicated that the potential impacts from construction and development of the Southgate portion of the revised SBACSP could be reduced to less than significant levels by implementation of the various mitigation measures approved in 2007 and as repeated in Sections 1–16 of this document. The current development proposal for the Westgate area is actually smaller (-23%) than the approved development plan under the SBCASP and the EIR, with implementation of the previously approved mitigation measures and conditions of approval.

Therefore, the proposed Westgate Building 4 development plan and this proposed Addendum No. 8 are consistent with the previous environmental analysis prepared for the SBACSP EIR and Addenda No. 1 through 7 for that document.

E. ADDENDUM DOCUMENTATION

When a lead agency has already prepared an EIR, CEQA mandates that "no subsequent or supplemental environmental impact report shall be required by the lead agency or any responsible agency, unless one or more of the following occurs: (a) substantial changes are proposed in the project which will require major revisions of the environmental impact

report; (b) substantial changes occur with respect to the circumstances which the project is being undertaken which will require major revisions to the environmental impact report; or (c) new information, which was not known or could not have been known at the time the environmental impact report was certified as complete, becomes available." (Cal. Pub. Res. Code Section 21166). State CEQA Guidelines Section 15162 clarifies that a subsequent EIR or supplemental EIR is only required when "substantial changes" occur to a project or the circumstances surrounding a project, or "new information" about a project implicates "new significant environmental effects" or a "substantial increase in the severity of previously identified significant effects" (State CEQA Guidelines Section 15162).

When only minor technical changes or additions to a previous EIR are necessary and none of the conditions described in Public Resources Code Section 21166 calling for preparation of a subsequent or supplemental EIR have occurred, CEQA allows the lead agency to prepare an adopt an addendum to the previously approved EIR [State CEQA Guidelines Section 15164(b)].

F. SUMMARY AND CONCLUSIONS

Detailed analysis of environmental impacts of the proposed development of the Southgate planning area has previously been conducted (i.e., EIR 1995 and the 2007 Initial Study and Addenda No. 1 through No. 6 to the 1995 EIR). The EIR determined that the proposed SBACSP, including the Westgate property, would result in significant short- and long-term air quality impacts, even with implementation of all feasible mitigation measures, and a Statement of Overriding Considerations was adopted at that time.

The current proposed development plan (380,172 square feet for Westgate Buildings 2 and 3) for the Westgate property is less intense (2,096,580 square feet or 63 percent) compared to the 3.27 million square feet for Westgate approved in 2007 under the San Bernardino Alliance California Specific Plan and confirmed in the 2007 Initial Study and in 2015 with the most recent EIR Addendum No. 6 to the original 1995 EIR. Therefore, the proposed Westgate Building 4 development plan is consistent with previous CEQA documentation and will have no additional or more intense impacts on the environment with implementation of the recommended mitigation measures and conditions of approval.

H. REFERENCES AND SOURCES

Hillwood Investments. Westgate Buildings 2 and 3 Site Plans. HPA, Inc. May 6, 2015.

LSA Associates, Inc. *"Addendum No. 5 and Consistency Evaluation, Final Environmental Impact Report, San Bernardino Alliance California Specific Plan."* September 5, 2013.

LSA Associates, Inc. *"Addendum No. 4 and Consistency Evaluation, Final Environmental Impact Report, San Bernardino Alliance California Specific Plan."* July 25, 2012.

LSA Associates, Inc. *"Addendum No. 3 and Consistency Evaluation, Final Environmental Impact Report, San Bernardino Alliance California Specific Plan."* June 1, 2012.

LSA Associates, Inc. *"Addendum No. 2 and Consistency Evaluation, Final Environmental Impact Report, San Bernardino Alliance California Specific Plan."* March 29, 2011.

LSA Associates, Inc. *"Draft EIR San Bernardino International Trade Center."* SCH 95082052. November 1995.

Michael Brandman Associates. *"Initial Study for Southgate, City of San Bernardino."* Draft August 28, 2006. Final May 27, 2007 (Staff Report).

Translutions, Inc. (TI). Westgate Buildings 2 and 3, Focused Traffic Study. August 3, 2015.

APPENDIX A

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT

Phase I Environmental Site Assessment

Westgate Kohl's

SEC South Lena Road and Tennis Court Lane

San Bernardino, San Bernardino County, CA

October 19, 2016

Terracon Project No. 60167416

Prepared for:

Hillwood Investment Properties, Inc.
Ontario, California

Prepared by:

Terracon Consultants, Inc.
Irvine, California

terracon.com

Terracon

Environmental ■ Facilities ■ Geotechnical ■ Materials

October 19, 2016

Terracon

Hillwood Investment Properties, Inc.
901 Via Piemonte, Suite 175
Ontario, CA 91764

Attn: Ms. Kathy Hoffer
P: (909) 382-0033
E: kathy.hoffer@hillwood.com

Re: Phase I Environmental Site Assessment
Westgate Kohl's
SEC South Lena Road and Tennis Court Lane
San Bernardino, San Bernardino County, California
Terracon Project No. 60167416

Dear Ms. Hoffer:

Terracon Consultants, Inc. (Terracon) is pleased to submit the enclosed Phase I Environmental Site Assessment (ESA) report for the above-referenced site. This assessment was performed in accordance with Terracon Proposal No. P60167416 dated October 4, 2016.

We appreciate the opportunity to be of service to you on this project. In addition to Phase I services, our professionals provide geotechnical, environmental, construction materials, and facilities services on a wide variety of projects locally, regionally and nationally. For more detailed information on all of Terracon's services please visit our website at www.terracon.com. If there are any questions regarding this report or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,
Terracon Consultants, Inc.

David M. Jamison
Field Geologist

Carl A Parten
Principal / Office Manager II
Environmental Professional

Attachments

TABLE OF CONTENTS

Page No.

EXECUTIVE SUMMARY i
Findings i
Opinions and Conclusions iv
Significant Data Gaps iv
Recommendations iv
1.0 INTRODUCTION 1
1.1 Site Description 1
1.2 Scope of Services 1
1.3 Standard of Care 1
1.4 Additional Scope Limitations, ASTM Deviations and Data Gaps 2
1.5 Reliance 3
1.6 Client Provided Information 3
2.0 PHYSICAL SETTING 4
3.0 HISTORICAL USE INFORMATION 5
3.1 Historical Topographic Maps, Aerial Photographs, Sanborn Maps 5
3.2 Historical City Directories 6
3.3 Site Ownership 7
3.4 Title Search 7
3.5 Environmental Liens and Activity and Use Limitations 7
3.6 Interviews Regarding Current and Historical Site Uses 7
3.7 Prior Report Review 8
4.0 RECORDS REVIEW 8
4.1 Federal and State/Tribal Databases 8
4.2 Local Agency Inquiries 15
5.0 SITE RECONNAISSANCE 16
5.1 General Site Information 16
5.2 Overview of Current Site Occupants 16
5.3 Overview of Current Site Operations 17
5.4 Site Observations 17
6.0 ADJOINING PROPERTY RECONNAISSANCE 19
7.0 ADDITIONAL SERVICES 19
8.0 DECLARATION 19

APPENDICES

APPENDIX A Exhibit 1 - Topographic Map, Exhibit 2 - Site Diagram
APPENDIX B Site Photographs
APPENDIX C Historical Documentation and User Questionnaire
APPENDIX D Environmental Database Information
APPENDIX E Credentials
APPENDIX F Description of Terms and Acronyms

EXECUTIVE SUMMARY

This Phase I Environmental Site Assessment (ESA) was performed in accordance with Terracon Proposal No. P60167416 dated October 4, 2016, and was conducted consistent with the procedures included in ASTM E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The ESA was conducted under the supervision or responsible charge of Carl A Parten, Environmental Professional. David M. Jamison performed the site reconnaissance on October 07, 2016.

Findings

A summary of findings is provided below. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein.

Site Description and Use

The site is located southeast of the intersection of South Lena Road and East Tennis Court Lane in San Bernardino, San Bernardino County, California and consists of approximately 23.4 acres of vacant land fenced on the east, south, and west sides. It is our understanding that the site will be developed with a 476,513 square feet (sf) warehouse/distribution center.

Historical Information

Based on a review of the historical information, the site consisted of undeveloped land through the early 1900s when row crops were observed by 1938. By the early 1950s the northern portion of the site was developed with a road and small parking area likely associated with the Norton Air Force Base military ordinance range which is discussed in section 4.1. The southeast corner of the site was developed with as a storage area associated with the Air Force by the late 1950s and is discussed in section 4.1. A structure was developed on the northern central portion of the site by the late 1960s which was cleared by the mid-2000s and the site has consisted of vacant land from the mid-2000s through the present.

The properties surrounding the site consisted of undeveloped land in the early 1900s and were developed as agricultural row crops by the late 1930s. The property adjoining the site to the north consisted of vacant land from as early as 1953 and was developed as the current storm water retention basin in the early 2000s. The property adjoining the site to the east was developed as a storage yard and warehouses for the Norton Air Force Base by the late 1940s and by the early 2000s was developed with the current Kohl's warehouse building. Commercial development south and west of the site commenced by the mid-1960s and by the mid-2000s the remaining vacant lots had been developed with the current commercial structures.

Records Review

Selected federal and state environmental regulatory databases as well as responses from state and local regulatory agencies were reviewed. The site was not identified in the regulatory database report.

Norton Air Force Base (NAFB) was identified in the regulatory database as an area of San Bernardino County that encompasses the site. NAFB is listed on the Department of Defense (DOD), Unexploded Ordnance Site (UXO), National Priority List (NPL), Superfund Enterprise Management System Archive (SEMS), CERCLIS, Corrective Action Planned (CORRACTS), RCRA—Treatment, Storage, and Disposal Facility (RCRA-TSDF), RCRA—Small Quantity Generator (RCRA-SQG), Engineering and Institutional Control (US ENG CONTROLS and US INST CONTROL), Records of Decision (ROD), and PCB Activity Database System (PADS) databases. Based on a review of the facility on the NPL website (http://yosemite.epa.gov/r9/sfund), the NAFB covers an approximately 2,165-acre area of San Bernardino. The facility operated as an overhaul center for airplane repair. Contaminants of concern for the facility were identified as waste oils, solvents, polychlorinated biphenyls (PCBs), acids, and paints from unlined pits, ponds, and storage drums.

Based on a review of documents available on the U.S. Air Force Civil Engineering Center Administrative Records website, the site was part of a soil survey conducted in 1994 in the 500 and 900 Series building areas. The former Explosive Ordnance Disposal Training Facility was located in the central portion of the site. Approximately 36 soil gas borings (SG-C1 through SG-C4, SG-D1 through SG-D4, SG-E1 through SG-E4, SG-F1 through SG-F4, SG-G1 through SG-G4, SG-H1 through SG-H4, SG-I1 through SG-I4, SG-J1 through SG-J4, SG-K1 through SG-K4) were advanced on the site to a depth of 15 feet bgs. Soil gas samples collected were analyzed for 1,1 dichloroethylene (1,1 DCE); 1,1,1 trichloroethane (1,1,1 TCA); tetrachloroethylene (PCE); benzene; toluene; acetone; and methyl ethyl ketone (MEK). Maximum soil gas concentrations were detected on the site as follows: acetone (5.5 ug/L) at SG-G1; and MEK (9.5 ug/L) at SG-K1.

For the purpose of evaluating the historical documentation, Terracon compared the soil gas concentrations to the Screening Levels [calculated using USEPA Region 9 RSLs] for future commercial indoor air and the DTSC Office of Human and Ecological Risk (HERO), and Human Health Risk Assessment (HHRA) Note 3 Table 3 Screening Levels for Volatile Compounds in Ambient Air, dated May 2016, and applying attenuation factors of 0.001 for future residential land use and 0.0005 for future industrial land use, per DTSC Vapor Intrusion Guidance dated October 2011, Table 2. The identified soil gas concentrations appear to be below the respective values for 1,1 DCE, 1,1,1 TCA, PCE, benzene; toluene; acetone; and MEK.

Area of Concern (AOC) 73 and Installation Restoration Program (IRP) site 8 were identified on the central portion and southeast corner of the site, respectively. Review of information associated with AOC 73 and IRP Site 8 was performed by Terracon. AOC 73 was identified as the explosive ordinance proficiency range and was reportedly used for training exercises to certify individuals

in the handling of military explosives. The reported environmental concern in the area was explosives waste in soils. The documentation reviewed by Terracon indicates that the explosives range was surveyed with geophysical equipment and identified metal debris (if encountered) was excavated, and no explosive waste material was identified. Soil samples were collected and analyzed for explosive chemical residue. No chemicals of concern were detected and the area was reported as cleared and recommended for no further action. IRP Site 8 reportedly consisted of a 1.5 acre yard used for the storage of transformers and drums containing PCB-containing fluids. In May of 1982 approximately 20 to 30 gallons of PCB-containing fluids were reportedly spilled and 600 cubic yards of soil were removed as part of the cleanup response. Investigations from 1984 to 1986 and 1992 to 1994 reported PCB concentrations in soil above human health protective standards. In November 1996, 1,553 cubic yards of soil were removed and the confirmation samples were collected from the base and sidewalls of the excavation. The highest reported concentrations of PCBs were 0.061 mg/kg (Aroclor-1254) and 0.054 mg/kg (Aroclor-1260) which are below the EPA Regional Screening Levels (RSLs) for residential and commercial land use. The impacted area was reportedly addressed and no further action was required by USAF. The United States EPA, State of California Department of Toxic Substances Control (DTSC), and Santa Ana Regional Water Quality Control Board reviewed and concurred with the USAF. Based on this information the AOC 73 and IRP Site 8 do not appear to represent an REC to the site.

The remaining facilities listed in the database report do not appear to represent RECs to the site at this time based upon regulatory status, apparent topographic gradient, and/or distance from the site.

Site Reconnaissance

During the site reconnaissance, an approximately 3,000 cubic yard stockpile of soil mixed with asphalt was observed on the northern central portion of the site. Leakage, spills or indications of other releases were not observed at the time of the reconnaissance. Plastic pipe was observed on the central southern portion of the site at the time of the reconnaissance. No leakage, spills or indications of releases were observed in the area of the pipe. Based on surface visual observations only, the stockpile of soil mixed with asphalt and the plastic pipe do not appear to represent an REC to the site.

Adjoining Properties

The property adjoining the site to north consists of a storm water retention basin followed by the Kohl's distribution center driveway. The Kohl's distribution center and the associated truck and trailer parking adjoin the site to the east. The property adjoining the site to the south consists of the Olivewood Business Park (808-880 East Mill Street) and a multi-level commercial office building (804 East Mill Street). South Lena Road abuts the site to the west followed by IHSS Public Authority (686 East Mill Street), Salvation Army (363 South Doolittle Street), a commercial warehouse (311 South Doolittle Street), and commercial building (280 South Lena Road).

Opinions and Conclusions

We have performed a Phase I ESA consistent with the procedures included in ASTM Practice E 1527-13 at APN: 013-633-116 southeast of the intersection of south Lena Road and east Tennis Court Lane, San Bernardino, San Bernardino County, California, the site. Recognized Environmental Conditions (RECs) or Controlled RECs were not identified in connection with the site.

Significant Data Gaps

No significant data gaps were identified.

Recommendations

Based on the scope of services, limitations, and conclusions of this assessment, further investigations does not appear warranted in connection with the site.

1.0 INTRODUCTION

1.1 Site Description

Site Name	Westgate Kohl's
Site Location/Address	SEC South Lena Road and Tennis Court Lane, San Bernardino, San Bernardino County, California
Land Area	Approximately 23.4 acres
Site Improvements	vacant land

The site location is depicted on Exhibit 1 of Appendix A, which was reproduced from a portion of the USGS 7.5-minute series topographic map. A Site Diagram of the site and adjoining properties is included as Exhibit 2 of Appendix A. Acronyms and terms used in this report are described in Appendix F.

1.2 Scope of Services

This Phase I ESA was performed in accordance with Terracon Proposal No. P60167416 dated October 4, 2016, and was conducted consistent with the procedures included in ASTM E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The purpose of this ESA was to assist the client in developing information to identify RECs in connection with the site as reflected by the scope of this report. This purpose was undertaken through user-provided information, a regulatory database review, historical and physical records review, interviews, including local government inquiries, as applicable, and a visual noninvasive reconnaissance of the site and adjoining properties. Limitations, ASTM deviations, and significant data gaps (if identified) are noted in the applicable sections of the report.

1.3 Standard of Care

This ESA was performed in accordance with generally accepted practices of this profession, undertaken in similar studies at the same time and in the same geographical area. We have endeavored to meet this standard of care, but may be limited by conditions encountered during performance, a client-driven scope of work, or inability to review information not received by the report date. Where appropriate, these limitations are discussed in the text of the report, and an evaluation of their significance with respect to our findings has been conducted.

Phase I ESAs, such as the one performed at this site, are of limited scope, are noninvasive, and cannot eliminate the potential that hazardous, toxic, or petroleum substances are present or have been released at the site beyond what is identified by the limited scope of this ESA. In conducting the limited scope of services described herein, certain sources of information and public records

were not reviewed. It should be recognized that environmental concerns may be documented in public records that were not reviewed. No ESA can wholly eliminate uncertainty regarding the potential for RECs in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs. No warranties, express or implied, are intended or made. The limitations herein must be considered when the user of this report formulates opinions as to risks associated with the site or otherwise uses the report for any other purpose. These risks may be further evaluated – but not eliminated – through additional research or assessment. We will, upon request, advise you of additional research or assessment options that may be available and associated costs.

1.4 Additional Scope Limitations, ASTM Deviations and Data Gaps

Based upon the agreed-on scope of services, this ESA did not include subsurface or other invasive assessments, vapor intrusion assessments or indoor air quality assessments (i.e. evaluation of the presence of vapors within a building structure), business environmental risk evaluations, or other services not particularly identified and discussed herein. Credentials of the company (Statement of Qualifications) have not been included in this report but are available upon request. Pertinent documents are referred to in the text of this report, and a separate reference section has not been included. Reasonable attempts were made to obtain information within the scope and time constraints set forth by the client; however, in some instances, information requested is not, or was not, received by the issuance date of the report. Information obtained for this ESA was received from several sources that we believe to be reliable; nonetheless, the authenticity or reliability of these sources cannot and is not warranted hereunder. This ESA was further limited by the following:

- Attempts were made to contact the local agencies in regard to records for the site; however, at the issuance of this report, a response from some of the agencies remains pending. Based on the available historical information, the absence of these responses does not constitute a REC to the site.
- Attempts were made to contact a site owner representative to conduct an interview regarding the current and historical uses of the site and any potential environmental concerns associated with the parent tract. A response has not been received from a parent tract owner or representative. Based on the historical information reviewed, the absence of the interview does not constitute an REC to the site.

An evaluation of the significance of limitations and missing information with respect to our findings has been conducted, and where appropriate, significant data gaps are identified and discussed in the text of the report. However, it should be recognized that an evaluation of significant data gaps is based on the information available at the time of report issuance, and an evaluation of information received after the report issuance date may result in an alteration of our conclusions, recommendations, or opinions. We have no obligation to provide information obtained or discovered by us after the issuance date of the report, or to perform any additional services, regardless of whether the information would affect any conclusions, recommendations, or

opinions in the report. This disclaimer specifically applies to any information that has not been provided by the client.

This report represents our service to you as of the report date and constitutes our final document; its text may not be altered after final issuance. Findings in this report are based upon the site's current utilization, information derived from the most recent reconnaissance and from other activities described herein; such information is subject to change. Certain indicators of the presence of hazardous substances or petroleum products may have been latent, inaccessible, unobservable, or not present during the most recent reconnaissance and may subsequently become observable (such as after site renovation or development). Further, these services are not to be construed as legal interpretation or advice.

1.5 Reliance

This ESA report is prepared for the exclusive use and reliance of Hillwood Investment Properties, Inc. Use or reliance by any other party is prohibited without the written authorization of Hillwood Investment Properties, Inc. and Terracon Consultants, Inc. (Terracon).

Reliance on the ESA by the client and all authorized parties will be subject to the terms, conditions and limitations stated in the proposal, ESA report, and Terracon's Agreement. The limitation of liability defined in the Agreement is the aggregate limit of Terracon's liability to the client and all relying parties.

Continued viability of this report is subject to ASTM E1527-13 Sections 4.6 and 4.8. If the ESA will be used by a different user (third party) than the user for whom the ESA was originally prepared, the third party must also satisfy the user's responsibilities in Section 6 of ASTM E1527-13.

1.6 Client Provided Information

Prior to the site visit, the current site owner, was asked to provide the following user questionnaire information as described in ASTM E1527-13 Section 6.

Client Questionnaire Responses

Client Questionnaire Item	Client Did Not Respond	Client's Response	
		Yes	No
Specialized Knowledge or Experience that is material to a REC in connection with the site.	X		
Actual Knowledge of Environmental Liens or Activity Use Limitations (AULs) that may encumber the site.	X		

Client Questionnaire Item	Client Did Not Respond	Client's Response	
		Yes	No
Actual Knowledge of a Lower Purchase Price because contamination is known or believed to be present at the site.	X		
Commonly Known or Reasonably Ascertainable Information that is material to a REC in connection with the site.	X		
Obvious Indicators of Contamination at the site.	X		

The site owner did not provide the requested User's information as of the issuance date of the report, which represents a data gap. Terracon assumes the client is evaluating the questionnaire information outside the context of Terracon's Phase I ESA scope of work and report.

2.0 PHYSICAL SETTING

Physical Setting

Physical Setting Information		Source
Topography (Refer to Appendix A for an excerpt of the Topographic Map)		
Site Elevation	Approximately 1035 feet (NGVD)	USGS Topographic Map, San Bernardino South Quadrangle, 2012
Surface Runoff/ Topographic Gradient	Relatively flat with a general gradient towards the west	
Closest Surface Water	Unnamed creek, approximately 398 feet north of the site.	
Soil Characteristics		
Soil Type Description	<u>Hanford coarse sandy loam</u> The Hanford coarse sandy loam is a well-drained group A soil which consists of alluvium derived from granite. This soil makes up roughly the south half of the site area. <u>Grangeville sandy loam</u> The Grangeville sandy loam is a somewhat poorly drained hydrologic group A soil which consists of alluvium derived from granite. This soil makes up roughly the northern half of the site area.	San Bernardino County, CA USDA NRCS Web Soil Survey Issued September, 2015
Geology/Hydrogeology		

Physical Setting Information		Source
Formation	Pleistocene-Holocene Quaternary deposits	Geologic Map of California, 2010
Description	Unconsolidated and semi-consolidated alluvium, lake, playa, and terrace deposits	
Estimated Depth to First Occurrence of Groundwater	Measured from 74 to 100 feet bgs at the Bonadiman-McCain Inc. LUST Cleanup Case adjoining the site to the northwest	Water Quality Control Board GeoTracker LUST Cleanup Case geotracker.waterboards.ca.gov
*Hydrogeologic Gradient	Measured to the south-southwest at the above referenced LUST cleanup case.	

* The groundwater flow direction and the depth to shallow, unconfined groundwater, if present, would likely vary depending upon seasonal variations in rainfall and other hydrogeological features. Without the benefit of on-site groundwater monitoring wells surveyed to a datum, groundwater depth and flow direction beneath the site cannot be directly ascertained.

3.0 HISTORICAL USE INFORMATION

Terracon reviewed the following historical sources to develop a history of the previous uses of the site and surrounding area, in order to help identify past uses for indications of RECs. Copies of selected historical documents are included in Appendix C.

3.1 Historical Topographic Maps, Aerial Photographs, Sanborn Maps

Readily available historical USGS topographic maps, selected historical aerial photographs (at approximately 10 to 15 year intervals) and historical fire insurance maps produced by the Sanborn Map Company were reviewed to evaluate land development and obtain information concerning the history of development on and near the site. Reviewed historical topographic maps, aerial photographs and Sanborn Maps are summarized below.

Historical fire insurance maps produced by the Sanborn Map Company were requested from EDR to evaluate past uses and relevant characteristics of the site and surrounding properties. Based on EDRs response to the inquiry Sanborn maps were not available for the site.

- Topographic map:
  - San Bernardino, California, published in **1896**, **1898**, **1901** (1:62,500)
  - Colton, California, published in **1938**, **1943** (1:31,680)
  - San Bernardino South, California, published in **1954**, **1967**, **1973**, **1980**, **2012** (1:24000)
- Aerial photograph:
  - USDA, **1938**, **1949**, **1953**, **1959**, **1968**, **1985**, **1989**, 1"=500'
  - USGS, **1966**, **1975**, 1"=500'
  - USGS/DOQQ, **1994**, 1"=500'

- USDA/NAIP, **2005**, **2006**, **2009**, **2010**, **2012**, 1"=500'

Historical Topographic Maps, Aerial Photographs and Sanborn Maps

Direction	Description
Site	Undeveloped land (1896-1901); developed as row crops (1938-1949); developed with a road and small parking area on the northeast portion of the site likely associated with the use as the Norton Air Force Base small explosives training range (1953); developed with a square structure on the southeast corner of the site (1959-1966); developed with a rectangular structure on the parking area and the square structure on the southeast corner has been cleared (1968-1994); vacant land (2005-2012).
North	Undeveloped land (1896-1901); developed as row crops (1938-1949); appears to be vacant land (1953); appears to be vacant land (1959-1994); developed as the storm water retention basin (2005-2012).
East	Undeveloped land (1896-1901); developed as row crops (1938); developed with a storage yard for the Norton Air Force Base (1949-1994); developed with the current Kohl's Warehouse building (2005-2012).
South	Undeveloped land (1896-1901); developed as row crops with a residence (1938-1959); developed with two of the current commercial buildings (1966-1994); developed with the current commercial buildings and parking areas (2005-2012).
West	Undeveloped land (1896-1901); developed as row crops (1938-1953); vacant land (1959); vacant land followed by one of the current commercial buildings (1966); Lena Road has been developed west of the site followed by two of the current commercial buildings to the southwest (1968-1975); additional commercial development and Lena Road has been paved (1985-2006); developed with the current commercial buildings (2009-2012).

3.2 Historical City Directories

The Cole Information Services, Haines & Company, GTE Directories, General Telephone Company, Pacific Telephone Co., Luskey Brothers & Co., Los Angeles Directory Co., San Bernardino Directory Co., R.L. Polk & Co city directories used in this study were made available through EDR (selected years reviewed: 1922 through 2013) and were reviewed at approximate five-year intervals, if readily available. Street listings not available prior to 1975. The site does not currently have a street address.

Historical City Directories

Direction	Description
Site	No listings / No address
North	No listings / No address
East	**890 East Mill Street**: No listings (1922-2003); Staffmark (2008-2013).

Direction	Description
South	**804 East Mill Street**: No listings (1922-1951); residential listing (1955); no listings (1956-2013). **808 East Mill Street**: No listings (1922-1951); residential listing (1955); no listings (1956-2013). **880 East Mill Street**: No listings (1922-1970); Air Force Assn Charity, AVCO Corp., Federal Empls Assn, Bell Aerospace, GTE Sylvania Inc., United Technologies, NCOA Service Center (1975); AFA Charity Golf, Bell Aerospace, General Electric Co Aero, GTE Sylvania Inc., Mestinghouse Electric (1981); no listings (1985-1990); Inland Technical Institute, Inland Strapping Products (1991); no listings (1995-2008); County of San Bernardino (2013).
West	**686 East Mill Street**: No listings (1922-2002); Area Agency on Aging, San Bern Co Aging Admn, Sanbdo Co Cmty family development, fiscal, food bank, food stamp, nutrition, personal oprtn, Ombudsman program (2003-2008); County of San Bernardino Aging Ombudsman Program (2013). **363 South Doolittle Street**: No listings (1922-1980); Pepsi Cola Bottling Company (1981); no listings (1985-1995); The Salvation Army (1996-2003); no listings (2008-2013). **311 South Doolittle Street**: No listings (1922-2013). **280 South Lena Road**: No listings (1922-1980); Bonadiuan landscaping (1981); no listings (1985-1990); Bonadiman Mccain Inc. (1991-2013);

3.3 Site Ownership

Based on a review of information obtained from the San Bernardino County Assessor's records, the current site owner is Inland Valley Development Agency. Previous owners were not identified.

3.4 Title Search

At the direction of the client, a title search was/was not included as part of the scope of services. Unless notified otherwise, we assume that the client is evaluating this information outside the scope of this report.

3.5 Environmental Liens and Activity and Use Limitations

Environmental lien and activity and use limitation records recorded against the site were not provided by the client. At the direction of the client, performance of a review of these records was not included as part of the scope of services and unless notified otherwise, we assume that the client is evaluating this information outside the scope of this report.

3.6 Interviews Regarding Current and Historical Site Uses

The following individuals were interviewed regarding the current and historical use of the site.

Interviewees

Interviewer	Interviewee/Email	Title	Date/Time
David Jamison	Brian Secrest / brian.secrest@kohls.com	Owner Representative	10/13/2016 / 14:32

Terracon attempted to interview Mr. Brian Secrest, owner representative, regarding current and historical uses of the site and any potential environmental concerns associated with the site. At the issuance of this report a response from Mr. Secrest has not been received.

3.7 Prior Report Review

Terracon requested the client provide any previous environmental reports they are aware of for the site. Previous reports were not provided by the client to Terracon for review.

4.0 RECORDS REVIEW

Regulatory database information was provided by EDR, a contract information services company. The purpose of the records review was to identify RECs in connection with the site. Information in this section is subject to the accuracy of the data provided by the information services company and the date at which the information is updated, and the scope herein did not include confirmation of facilities listed as "unmappable" by regulatory databases.

In some of the following subsections, the words up-gradient, cross-gradient and down-gradient refer to the topographic gradient in relation to the site. As stated previously, the groundwater flow direction and the depth to shallow groundwater, if present, would likely vary depending upon seasonal variations in rainfall and the depth to the soil/bedrock interface. Without the benefit of on-site groundwater monitoring wells surveyed to a datum, groundwater depth and flow direction beneath the site cannot be directly ascertained.

4.1 Federal and State/Tribal Databases

Listed below are the facility listings identified on federal and state/tribal databases within the ASTM-required search distances from the approximate site boundaries. Database definition, descriptions, and the database search report are included in Appendix D.

Federal Databases

Database	Description	Distance (miles)	Listings
CERCLIS	Comprehensive Environmental Response, Compensation, & Liability Information System	0.5	2

Database	Description	Distance (miles)	Listings
CERCLIS / NFRAP	CERCLIS / No Further Remedial Action Planned	0.5	0
ERNS	Emergency Response Notification System	Site	0
IC / EC	Institutional Control/Engineering Control	Site	0
NPL	National Priorities List	1.0	1
NPL (Delisted)	National Priorities Delisted List	0.5	0
RCRA CORRACTS/ TSD	RCRA Corrective Action Activity	1.0	1
RCRA Generators	Resource Conservation and Recovery Act	Site and adjoining	3
RCRA Non-CORRACTS/ TSD	RCRA Non-Corrective Action Activity	0.5	2

State/Tribal Databases

Database	Description	Distance (miles)	Listings
CALSITES	CalSites Database	1.0	0
CALSITES (AWP)	Active Annual Workplan Sites	1.0	0
DOD	Department of Defense Sites	1.0	0
EDR US Hist Auto Stat	EDR Exclusive Historic Gas Stations	0.25	1
EMI	Emissions Inventory Data	Site	0
ENVIROSTOR	Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program	1.0	9
FINDS	Facility Index System/Facility Registry System	Site	0
HAZNET	Facility and Manifest Data	Site	0
HIST CORTESE	Hazardous Waste & Substance Site List	0.5	4
HWP	EnviroStor Permitted Facilities Listing	1.0	1
HWT	Registered Hazardous Waste Transporter Database	0.25	1
LUST	Leaking Underground Storage Tanks	0.5	8
NY MANIFEST	Facility and Manifest Data	0.25	0
RESPONSE	State Response Sites	1.0	1
ROD	Records Of Decision	1.0	0
San Bern. Co. Permit	Hazardous Material Permits	0.25	15
SWEEPS UST	Statewide Environmental Evaluation and Planning System	0.25	4
HIST UST	Historical Underground Storage Tanks	0.25	2
SWF/LF	Solid Waste Facilities/Landfills	0.5	0
CA FID UST	Facility Inventory Database	0.25	4

Database	Description	Distance (miles)	Listings
UST	Underground Storage Tank Facilities	Site and adjoining	0
VCP	Voluntary Cleanup Program	0.5	0

In addition to the above ASTM-required listings, Terracon reviewed other federal, state, local, and proprietary databases provided by the database firm. A list of the additional reviewed databases is included in the regulatory database report included in Appendix D.

The following table summarizes the site-specific information provided by the database and/or gathered by this office for identified facilities. Facilities are listed in order of proximity to the site. Additional discussion for selected facilities follows the summary table.

Listed Facilities

Facility Name And Location	Estimated Distance / Direction/Gradient	Database Listings	Is a REC, CREC, or HREC to the Site
Norton Airforce Base (LNDFLL #2) I-10/US 395 Former Norton AFB	Site Region	NPL, SEMS, CORRACTS, RCRA-TSDF, RCRA-SQG, US ENG CONTROLS, US INST CONTROL, ROD, PADS, DOD, UXO	No, discussed below
Kohl's Department Store 890 East Mill St.	East-adjoining / Up-gradient	San Bern Co. Permit	No, discussed below
Bonadiman-McCain Inc. 280 S Lena Road	West adjoining/ / Cross-gradient	LUST, SWEEPS UST, CA FID UST, EMI, San Bern. Co. Permit, UST,	No, discussed below
363 S. Doolittle Street Hertz Penske	West adjoining / Cross-gradient	RCRA NonGen / NLR, RCRA-SQG, FINDS, ECHO	No, discussed below
Ryder Truck Rental		RCRA-SQG, FINDS, HAZNET, ECHO	
Pepsi Cola		SWEEPS UST, CA FID UST, HIST UST, HAZNET	

Facility Name And Location	Estimated Distance / Direction/Gradient	Database Listings	Is a REC, CREC, or HREC to the Site
Salvation Army		San Bern Co Permit	
715 E Mill Street	400-feet / South / Down-gradient	EDR Hist Auto, EMI, San Bern. Co Permit	No, based on distance and gradient.
General Seating Co. 585 E Tennis Court Ln	420-feet / West / Cross-gradient	SWEEPS UST, CA FID UST	No, based on distance and gradient.
Mobil #18-ARM 807 E Mill Street	420-feet / South / Down-gradient	LUST, HIST CORTESE	No, based on distance and gradient

Norton Air Force Base

Norton Air Force Base (NAFB) was identified in the regulatory database as an area of San Bernardino County that encompasses the site. NAFB is listed on the Department of Defense (DOD), Unexploded Ordnance Site (UXO), National Priority List (NPL), Superfund Enterprise Management System Archive (SEMS), CERCLIS, Corrective Action Planned (CORRACTS), RCRA—Treatment, Storage, and Disposal Facility (RCRA-TSDF), RCRA—Small Quantity Generator (RCRA-SQG), Engineering and Institutional Control (US ENG CONTROLS and US INST CONTROL), Records of Decision (ROD), and PCB Activity Database System (PADS) databases. Based on a review of the facility on the NPL website (http://yosemite.epa.gov/r9/sfund), the NAFB covers an approximately 2,165-acre area of San Bernardino. The facility operated as an overhaul center for airplane repair. Contaminants of concern for the property were identified as waste oils, solvents, polychlorinated biphenyls (PCBs), acids, and paints from unlined pits, ponds, and storage drums.

Terracon reviewed documents available on the U.S. Air Force Civil Engineering Center Administrative Records website (http://afcec.publicadmin-record.us.af.mil/). The following is a list of Norton Air Force Base (NAFB) reports reviewed by Terracon and a summary of findings regarding the site and adjacent properties:

Draft Technical Memorandum Results of the Confirmation Study Addendum Number 1 and Expanded Source Investigation Addendum Number 1 Work Plan for Norton Air Force Base, San Bernardino, California dated November 8, 1995

Based on a review of documents available on the U.S. Air Force Civil Engineering Center Administrative Records website, the site was part of a soil survey conducted in 1994 in the 500 and 900 Series building areas. The former Explosive Ordnance Disposal Training Facility was located in the ventral central portion of the site. Approximately 36 soil gas borings (SG-C1 through SG-C4, SG-D1 through SG-D4, SG-E1 through SG-E4, SG-F1 through SG-F4, SG-G1 through SG-G4, SG-H1 through SG-H4, SG-I1 through SG-I4, SG-J1 through SG-J4, SG-K1 through SG-K4) were advanced on the site to a depth of 15 feet bgs. Soil gas samples collected were analyzed

for 1,1 dichloroethylene (1,1 DCE); 1,1,1 trichloroethane (1,1,1 TCA); tetrachloroethylene (PCE); benzene; toluene; acetone; and methyl ethyl ketone (MEK). Maximum soil gas concentrations were detected on the site as follows: acetone (5.5 ug/L) at SG-G1; and MEK (9.5 ug/L) at SG-K1.

For the purpose of evaluating the historical documentation, Terracon compared the soil gas concentrations reported were compared to the Screening Levels [calculated using USEPA Region 9 RSLs] for future commercial indoor air and the DTSC Office of Human and Ecological Risk (HERO), and Human Health Risk Assessment (HHRA) Note 3 Table 3 Screening Levels for Volatile Compounds in Ambient Air, dated May 2016, and applying attenuation factors of 0.001 for future residential land use and 0.0005 for future industrial land use, per DTSC Vapor Intrusion Guidance dated October 2011, Table 2. The identified soil gas concentrations were appear to be well below the respective values for 1,1 DCE, 1,1,1 TCA, PCE, benzene; toluene; acetone; and MEK.

Former Norton Air Force Base Operable Unit Number 2 Proposed Plan, BCT Review Draft No. 1 (Proposed Plan) dated October 10, 1997

Based on a review of the report, the site is located in the former Operable Unit 2 (OU2) area of NAFB. The report included location maps (Figures 1 and 2) of Installation Restoration Program (IRP) sites and former areas of concern (AOCs) in the OU2 area. The Proposed Plan additionally summarized remediation efforts in the IRPs and AOCs. Figure 2 identified one area of concern (AOC 73) located on the central portion of the site and IRP Site 8 located on the southeast corner of the site. Review of information associated with AOC 73 and IRP Site 8 was performed by Terracon. AOC 73 was identified as the explosive ordinance proficiency range and was reportedly used for training exercises to certify individuals in the handling of military explosives. The reported environmental concern in the area was explosives waste in soils. The documentation reviewed by Terracon indicates that the explosives range was surveyed with geophysical equipment and all identified metal debris (if encountered) was excavated, and no explosive waste material was identified. Soil samples were collected and analyzed for explosive chemical residue. No chemicals of concern were detected and the area was reported as cleared and recommended for no further action. IRP Site 8 reportedly consisted of a 1.5 acre yard used for the storage of transformers and drums containing PCB-containing fluids. In May of 1982 approximately 20 to 30 gallons of PCB-containing fluids were reportedly spilled and 600 cubic yards of soil were removed as part of the cleanup response. Investigations from 1984 to 1986 and 1992 to 1994 reported PCB concentrations in soil above human health protective standards. In November 1996, 1,553 cubic yards of soil were removed and the confirmation samples were collected from the base and sidewalls of the excavation. The highest reported concentrations of PCBs were 0.061 mg/kg (Aroclor-1254) and 0.054 mg/kg (Aroclor-1260) which are below the EPA Regional Screening Levels (RSLs) for residential and commercial land use. The USAF determined that impacted area in excess of PRGs was addressed and no further action was required by USAF. The United States EPA, State of California Department of Toxic Substances Control (DTSC), and Santa Ana Regional Water Quality Control Board reviewed and concurred with the USAF. Based on this information, the AOC 73 and IRP Site 8 do not appear to represent an REC to the site.

AOCs 37, 46 and 64 were identified as part of the NAFB to the east of the site. General refuse and debris was collected at AOC 37 as well as a street sweeper washing pad. In November 1996 8,925 cubic yards of soil containing fuel and grease compounds and PCBs was removed from the areas of concern. Confirmation samples were reported with concentrations of arsenic (1.5 mg/kg), PCBs (0.930 mg/kg), Benzo(b)fluoranthene (0.25 mg/kg) above residential RSLs and below commercial RSLs. Concentrations of Benzo(a)pyrene (0.79 mg/kg) are above residential and commercial screening levels and Benzo(k)fluoranthene (0.26 mg/kg) are below residential and commercial RSLs. Based on the limited impact, environmental medium affected (soil only), and the regulatory status reported for Areas 37 and 46, these areas do not appear to represent a REC to the site.

AOC 46 located east of the site, consists of the 900 series buildings primarily used as supply and depot warehouses and offices which were used for the temporary storage of hazardous waste at the time of the base closure. In 1994, a soil gas investigation (32 soil gas probes) in the site vicinity was conducted to evaluate the historical site use by the NAFB. Based on soil gas survey findings, two soil borings were advanced by Earth Tech on northeast and south of Building 939 (refer to exhibit 2), where soil gas survey results showed concentrations of 1,1 DCE, 1,1,1 TCA, PCE, benzene; toluene; acetone; and MEK. Soil analytical results identified 2-pentadecanone at concentrations ranging from 0.072 to 1.4 mg/kg in soil and other VOCs were reported at concentrations below laboratory method detection limits. Based on this information further investigation of the 900 series building area was not warranted as part of the 900 Series buildings.178 samples were collected from 177 points in the area. Based on the low level and infrequent detections of chemicals the area was recommended for no further action.

AOC 64 was reportedly the bases entomology shop where insecticides and herbicides were stored. Low levels of arsenic and DDT were reported from soil samples taken in the area. Soil samples were collected and concentrations were reported for Heptachlor (0.00037 mg/kg), Endosulfan (0.0011 mg/kg), DDT (0.0014 mg/kg), Endrin Aldehyde (0.0005 mg/kg), and Heptachlor Epoxide (0.00087). All the reported concentrations are below residential and commercial RSLs. The USAF with concurrence from State regulatory agencies concluded that due to low levels of contaminants present no further action was warranted. Therefore the east adjoining AOCs 37, 46, and 64 does not appear to represent a RECs to the site.

United States Air Force Installation Restoration Program, Final Second CBA OU Five-Year Review Report for Former Norton Air Force Base, San Bernardino County, California dated December 2005

Based on a review of the report, remedial actions for the TCE groundwater plume began in 1991 with the implementation of the Pump and Treat (PAT) system, excavation and removal of contaminated soil, and soil vapor extraction treatment systems. Based on a review of the Groundwater Plumes 1998-2001 (Figure 4.1a) and Groundwater Plumes 2002-2005 and (Figure 4.1b), from as early as 1998 through 2002, a Cis-1,2-DCE groundwater plume was located approximately 2,000-feet east of the site. The figures depicted groundwater flows to the southwest, away from the site. Based on a review of the figures, the site did not appear to be

affected by the groundwater plume. Copies of the figures are included in Appendix C. A copy of the report is included in Appendix C.

Kohl's Department Stores-DC #855

The Kohl's department store located adjoining the site to the east and topographically up gradient of the site, is listed in the regulatory database report as a San Bernardino County Permit (San Bern Co. Permit) facility. A review of the listing indicates the facility has an active small quantity generator permit for hazardous materials. Based on the absence of regulatory release listings and the anticipated depth to groundwater in the site vicinity (greater than 50 feet bgs), Kohl's Department Stores-DC #855 does not appear to represent an REC to the site.

Bonadiman-McCain Inc.

Bonadiman-McCain Inc. formerly located adjoining the site to the west across south Lena Road, and in a down gradient topographic position relative to the site, is listed in the regulatory database report as a Leaking Underground Storage Tank (LUST), Statewide Environmental Evaluation and Planning System (SWEEPS UST), Facility Inventory Database (CA FID UST), Emissions Inventory Data (EMI), and San Bern Co. Permit facility. Based on a review of the UST listings the facility was equipped with one 2,000-gallon diesel UST and one 2,000-gallon gasoline UST in 1976. The San Bernardino County Fire Department oversaw the removal of both tanks along with the associated piping and dispensers in June of 2009. Petroleum hydrocarbon impacts were observed in the area of the former USTs, piping and dispensers. From 2009 through 2012, 12 soil borings and eight groundwater monitoring wells were advanced on the property to characterize the magnitude and extent of contamination. From February 2013 through March 2015 16,836 pounds of soil vapor was removed from the property with a soil vapor extraction system. The facility was awarded regulatory closure by the Regional Water Quality Control Board September 30, 2015. Based on the regulatory closure of the facility, the topographic down gradient position of the facility relative to the site, and the anticipated depth to groundwater in the site vicinity, Bonadiman-McCain Inc., does not appear to represent an REC to the site.

363 S. Doolittle Street

363 south Doolittle Street, located adjoining the site to the west across south Lena Road has operated formerly as Hertz Penske, Ryder Truck Rental, and Pepsi Cola. The facility is currently listed as the Salvation Army. The former Ryder Truck Rental facility is listed in the regulatory database report as a RCRA-NonGen / NLR, RCRA-SQG, FINDS, HAZNET and ECHO facility. Based on a review of the listings no violations were recorded for the RCRA listings and waste generated at the facility was reported as aqueous solution with total organic residues less than 10 percent in 1999. Based on the absence of regulatory release listings, the down-gradient topographic position, and the anticipated depth to groundwater, the former Ryder Truck Rental does not appear to represent an REC to the site.

The former Hertz Penske facility is listed as a RCRA-SQG, FINDS, and ECHO facility. Based on a review of the listings no violations were recorded associated with the facility. Based on the absence of regulatory release listings, the down-gradient topographic position, and the anticipated

depth to groundwater, the former Hertz Penske facility does not appear to represent an REC to the site.

The former Pepsi Cola facility is listed as a SWEEPS UST, CA FID UST, HIST UST, and HAZNET facility. Based on a review of the UST listings, the facility was equipped with two 10,000-gallon gasoline USTs and one 550-gallon waste oil UST in 1980. Based on a review of the HAZNET listing, waste generated at the facility is reported as waste oil and mixed oil, and alkaline solution without metals in 2011. Based on the absence of regulatory release listings, the down-gradient topographic position, and the anticipated depth to groundwater, the former Pepsi Cola facility does not appear to represent an REC to the site.

The Salvation Army facility is listed as a San Bern Co. Permit facility. Based on a review of the listing the facility has permits for hazardous materials 1-3 chemicals and as a conditionally exempt small quantity generator which expire in 2016. Based on the absence of regulatory release listings, the down-gradient topographic position, and the anticipated depth to groundwater, the Salvation Army facility does not appear to represent an REC to the site.

The remaining facilities listed in the database report do not appear to represent RECs to the site at this time based upon regulatory status, apparent topographic gradient, and/or distance from the site.

Unmapped facilities are those that do not contain sufficient address or location information to evaluate the facility listing locations relative to the site. The report listed six facilities in the unmapped section. Determining the location of unmapped facilities is beyond the scope of this assessment; however, none of these facilities were identified as the site or adjacent properties. These facilities are listed in the database report in Appendix D.

4.2 Local Agency Inquiries

Agency Contacted/ Contact Method	Response
San Bernardino County Department of Environmental Health / Fax: (909) 387-4323	At the issuance of this report a response from the San Bernardino County Department of Environmental Health has not been received.
South Coast Air Quality Management District / Fax: (909) 396-3330	According to Ms. Stacey Walkowiak with the South Coast Air Quality Management District, no records for the site were found.

Agency Contacted/ Contact Method	Response
San Bernardino County Community Development Department / Fax: (909) 387-8306	At the issuance of this report a response from the San Bernardino County Community Development Department has not been received.
San Bernardino City Clerk / Fax: (909) 384-5158	At the issuance of this report a response from the San Bernardino City Clerk has not been received.
Department of Toxic Substances Control / Email: pubreqact@dtsc.ca.gov	According to Ms. Jan Papararo with the Department of Toxic Substances Control, no records for the site were found.
Regional Water Quality Control Board / Email: filereview8@waterboards.ca.gov	According to Ms. Lenore Gamez with the Santa Ana Regional Water Quality Control Board, their records cannot be searched by APN and the site does not currently have an address. No records for the site were found.
San Bernardino County Fire Department / Fax (909) 386-8460	At the issuance of this report a response from the San Bernardino County Fire Department has not been received.

5.0 SITE RECONNAISSANCE

5.1 General Site Information

Information contained in this section is based on a visual reconnaissance conducted while walking through the site and the accessible interior areas of structures, if any, located on the site. Exhibit 2 in Appendix A is a Site Diagram of the site. Photo documentation of the site at the time of the visual reconnaissance is provided in Appendix B. Credentials of the individuals planning and conducting the site visit are included in Appendix E.

General Site Information

Site Reconnaissance	
Field Personnel	David M. Jamison
Reconnaissance Date	October 07, 2016
Weather Conditions	Sunny, 85 Degrees
Site Contact/Title	Brian Secrest / Owner Representative

5.2 Overview of Current Site Occupants

At the time of the site reconnaissance the site was observed to be unoccupied.

5.3 Overview of Current Site Operations

The site was observed to consist of vacant land at the time of the site reconnaissance.

5.4 Site Observations

The following table summarizes site observations and interviews. Affirmative responses (designated by an "X") are discussed in more detail following the table.

Site Characteristics

Category	Item or Feature	Observed or Identified
Site Operations, Processes, and Equipment	Emergency generators	
	Elevators	
	Air compressors	
	Hydraulic lifts	
	Dry cleaning	
	Photo processing	
	Ventilation hoods and/or incinerators	
	Waste treatment systems and/or water treatment systems	
	Heating and/or cooling systems	
	Paint booths	
	Sub-grade mechanic pits	
	Wash-down areas or carwashes	
	Pesticide/herbicide production or storage	
	Printing operations	
	Metal finishing (e.g., electroplating, chrome plating, galvanizing, etc.)	
	Salvage operations	
	Oil, gas or mineral production	
	Other processes or equipment	
Aboveground Chemical or Waste Storage	Aboveground storage tanks	
	Drums, barrels and/or containers ≥ 5 gallons	
	MSDS	

Category	Item or Feature	Observed or Identified
Underground Chemical or Waste Storage, Drainage or Collection Systems	Underground storage tanks or ancillary UST equipment	
	Sumps, cisterns, French drains, catch basins and/or dry wells	
	Grease traps	
	Septic tanks and/or leach fields	
	Oil/water separators, clarifiers, sand traps, triple traps, interceptors	
	Pipeline markers	
	Interior floor drains	
Electrical Transformers/ PCBs	Transformers and/or capacitors	
	Other equipment	
Releases or Potential Releases	Stressed vegetation	
	Stained soil	
	Stained pavement or similar surface	
	Leachate and/or waste seeps	
	Trash, debris and/or other waste materials	
	Dumping or disposal areas	
	Construction/demolition debris and/or dumped fill dirt	X
	Surface water discoloration, odor, sheen, and/or free floating product	
	Strong, pungent or noxious odors	
	Exterior pipe discharges and/or other effluent discharges	
Other Notable Site Features	Surface water bodies	
	Quarries or pits	
	Wastewater lagoons	
	Wells	

Releases or Potential Releases

Construction/demolition debris and/or dumped fill dirt

At the time of the site reconnaissance an approximately 3,000 cubic yard stockpile of soil mixed with asphalt was observed on the northern central portion of the site. Leakage, spills or indications of other releases were not observed at the time of the reconnaissance. Plastic pipe was observed on the central southern portion of the site at the time of the reconnaissance. No leakage, spills or indications of releases were observed in the area of the pipe. Based on surface visual observations only, the stockpile of soil mixed with asphalt and the plastic pipe do not appear to represent an REC to the site.

6.0 ADJOINING PROPERTY RECONNAISSANCE

Visual observations of adjoining properties (from site boundaries) are summarized below.

Adjoining Properties

Direction	Description
North	The property adjoining the site to north consists of a storm water retention basin followed by the Kohl's distribution center driveway.
East	The Kohl's distribution center and the associated truck and trailer parking adjoin the site to the east.
South	The property adjoining the site to the south consists of the Olivewood Business park (808-880 East Mill Street) and a multi-level commercial office building (804 East Mill Street).
West	South Lena Road abuts the site to the west followed by IHSS Public Authority (686 East Mill Street), Salvation Army (363 South Doolittle Street), a commercial warehouse (311 South Doolittle Street), and commercial building (280 South Lena Road).

Indications of RECs were not observed with the adjoining properties.

7.0 ADDITIONAL SERVICES

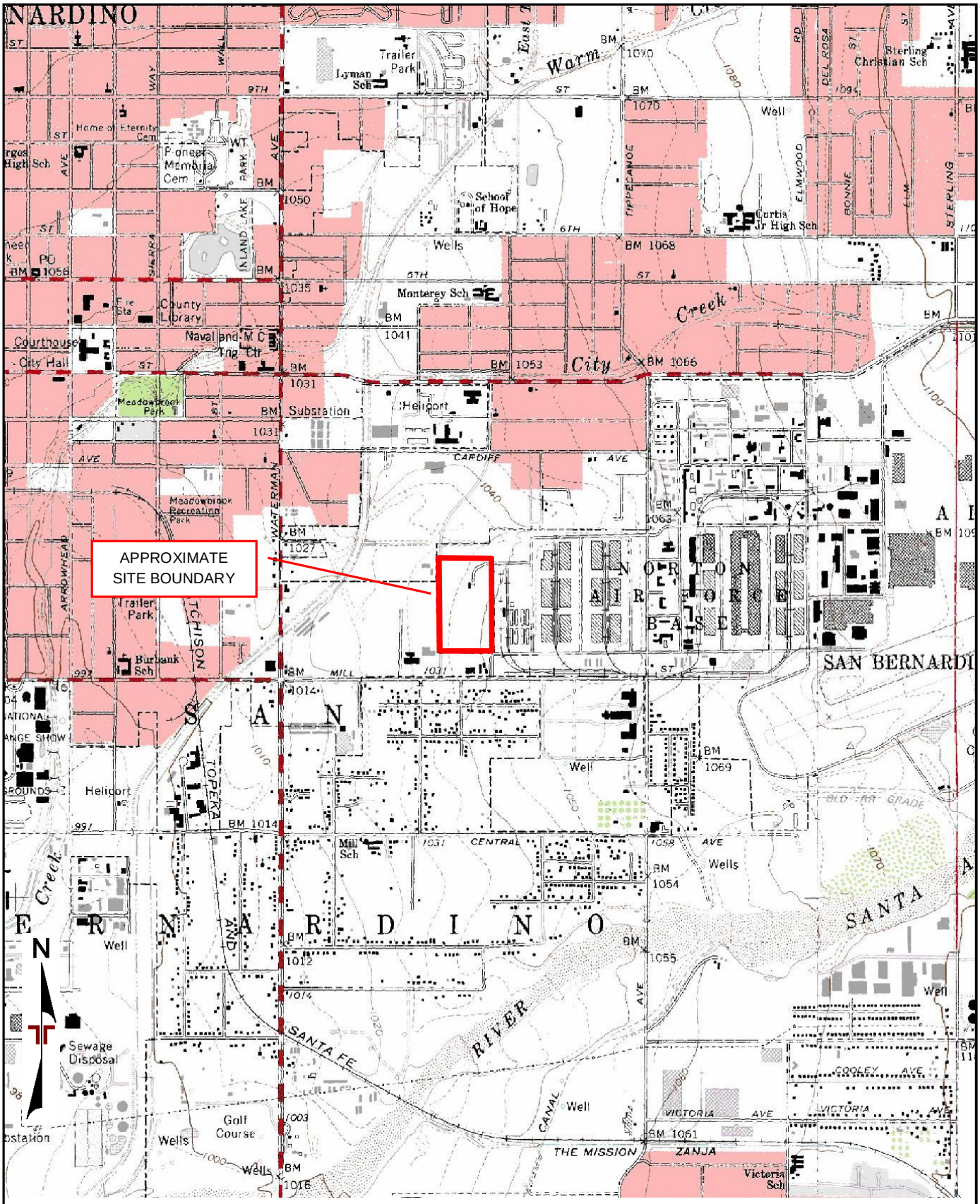
Per the agreed scope of services specified in the proposal, additional services (e.g. asbestos sampling, lead-based paint sampling, wetlands evaluation, lead in drinking water testing, radon testing, vapor encroachment screening, etc.) were not conducted.

8.0 DECLARATION

I, Carl A Parten, declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR 312; and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the site. I have developed and performed the All Appropriate Inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Carl A Parten
Principal / Office Manager II
Environmental Professional

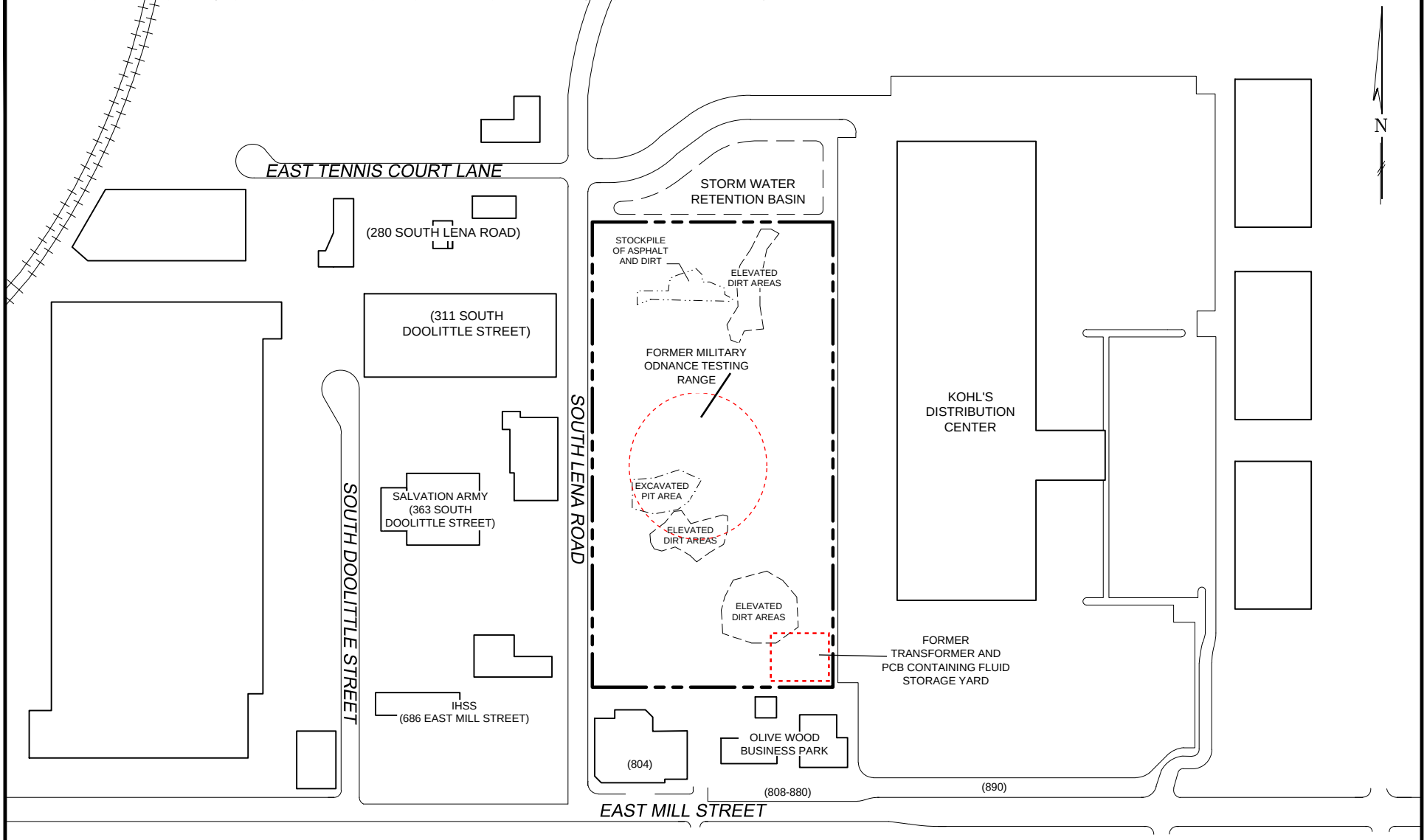
APPENDIX A
EXHIBIT 1 – TOPOGRAPHIC MAP
EXHIBIT 2 – SITE DIAGRAM



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY
QUADRANGLES INCLUDE: SAN BERNARDINO SOUTH, CA (1/1/1980) and REDLANDS, CA (1/1/1996).

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614-5835	TOPOGRAPHIC MAP	Exhibit
Drawn by: DJ	Scale: 1"=2,000'		Westgate Kohl's **SEC South Lena Road and East Tennis Court Lane** **San Bernardino, San Bernardino County, California**	1
Checked by: CAP	File Name: .			
Approved by: CAP	Date: 10/18/2016			

Date: 10/12/16 C:\Drawings\Terracon\California\2016\60167416\60167416.dwg Layout: SITE Current Layer: 0



LEGEND:

APPROXIMATE SITE BOUNDARY

0 200 400 FEET

APPROXIMATE SCALE

THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

Project Mngr:	DJ
Drawn By:	DLC
Checked By:	CAP
Approved By:	CAP

Project No.	60167416
Scale:	AS SHOWN
Date:	10/12/2016

Terracon
Consulting Engineers and Scientists
2817 McGAW AVENUE IRVINE, CALIFORNIA 92614
PH. (949) 261-0051 FAX. (949) 261-6110

SITE DIAGRAM

WESTGATE KOHL'S
SEC OF SOUTH LENA ROAD AND EAST TENNIS CT LANE
SAN BERNARDINO, SAN BERNARDINO COUNTY, CALIFORNIA

EXHIBIT 2

APPENDIX B
SITE PHOTOGRAPHS

Photo 1 View of the west portion of the site to the south.

Photo 2 View of the east portion of the site to the south.

Photo 3 View of the central portion of the site to the west.

Photo 4 View of the central portion of the site to the east.

Photo 5 View of the south portion of the site to the east.

Photo 6 View of the south portion of the site to the west.

Photo 7 View of the east portion of the site to the north.

Photo 8 View of the west portion of the site to the north.

Photo 9 View of the raised dirt area on the northeast corner of the site.

Photo 10 View of the dumped soil mixed with asphalt on the north central portion of the site.

Photo 11 View of the shallow pit in the central portion of the site.

Photo 12 View of the plastic pipe on the southern portion of the site.

Photo 13 View of the north-adjoining storm water retention basin.

Photo 14 View of the east-adjoining Kohl's Distribution Center (890 E Mill St).

Photo 15 View of the south-adjoining Olive-Wood Business Park (808-880 E Mill St.).

Photo 16 View of the south-adjoining commercial building (804 E Mill St.).

Photo 17 View of the west-adjoining IHSS (686 E Mill St).

Photo 18 View of the west-adjoining Salvation Army (363 S Doolittle St).

Photo 19 View of the west-adjoining 311 S Doolittle Street.

Photo 20 View of the west-adjoining 280 S Lena Road.

APPENDIX C
HISTORICAL DOCUMENTATION AND USER QUESTIONNAIRE

Westgate Kohls

SEC of S Lena Road & Tennis CT Ln

San Bernardino, CA 92408

Inquiry Number: 4746163.9

October 07, 2016

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

10/07/16

Site Name:

Westgate Kohls
SEC of S Lena Road & Tennis
San Bernardino, CA 92408
EDR Inquiry # 4746163.9

Client Name:

Terracon
2817 McGraw Ave
Irvine, CA 92606
Contact: David Jamison

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1994	1"=500'	Acquisition Date: June 01, 1994	USGS/DOQQ
1989	1"=500'	Flight Date: August 15, 1989	USDA
1985	1"=500'	Flight Date: July 28, 1985	USDA
1975	1"=500'	Flight Date: December 01, 1975	USGS
1968	1"=500'	Flight Date: August 21, 1968	USDA
1966	1"=500'	Flight Date: April 16, 1966	USGS
1959	1"=500'	Flight Date: October 15, 1959	USDA
1953	1"=500'	Flight Date: January 23, 1953	USDA
1949	1"=500'	Flight Date: May 06, 1949	USDA
1938	1"=500'	Flight Date: July 04, 1938	USDA

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2016 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

Aerial Photograph

2012

0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	2012 AERIAL PHOTOGRAPH	Appendix
Drawn by: DJ	Scale: As Shown		Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA	C
Checked by: CAP	File Name:			
Approved by: CAP	Date: 2012			

Aerial Photograph

2010

0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	2010 AERIAL PHOTOGRAPH	Appendix
Drawn by: DJ	Scale: As Shown		Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA	C
Checked by: CAP	File Name:			
Approved by: CAP	Date: 2010			

Aerial Photograph

2009

0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	2009 AERIAL PHOTOGRAPH	Appendix
Drawn by: DJ	Scale: As Shown		Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA	C
Checked by: CAP	File Name:			
Approved by: CAP	Date: 2009			

Aerial Photograph

2006

N

0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	2006 AERIAL PHOTOGRAPH Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA
Drawn by: DJ	Scale: As Shown		
Checked by: CAP	File Name:		
Approved by: CAP	Date: 2006		

Appendix C

Aerial Photograph

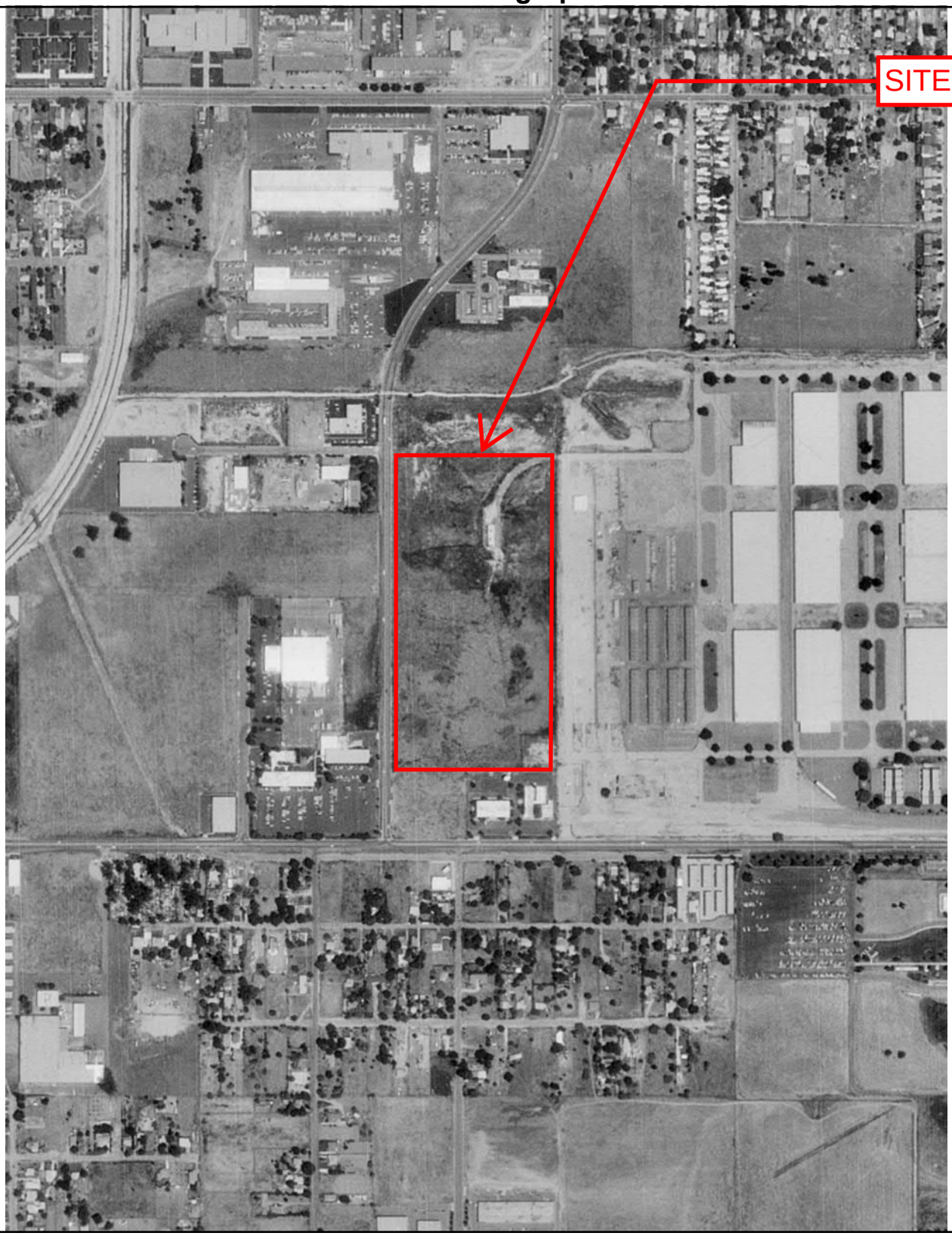
2005

0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	2005 AERIAL PHOTOGRAPH	Appendix
Drawn by: DJ	Scale: As Shown		Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA	C
Checked by: CAP	File Name:			
Approved by: CAP	Date: 2005			

Aerial Photograph

1994

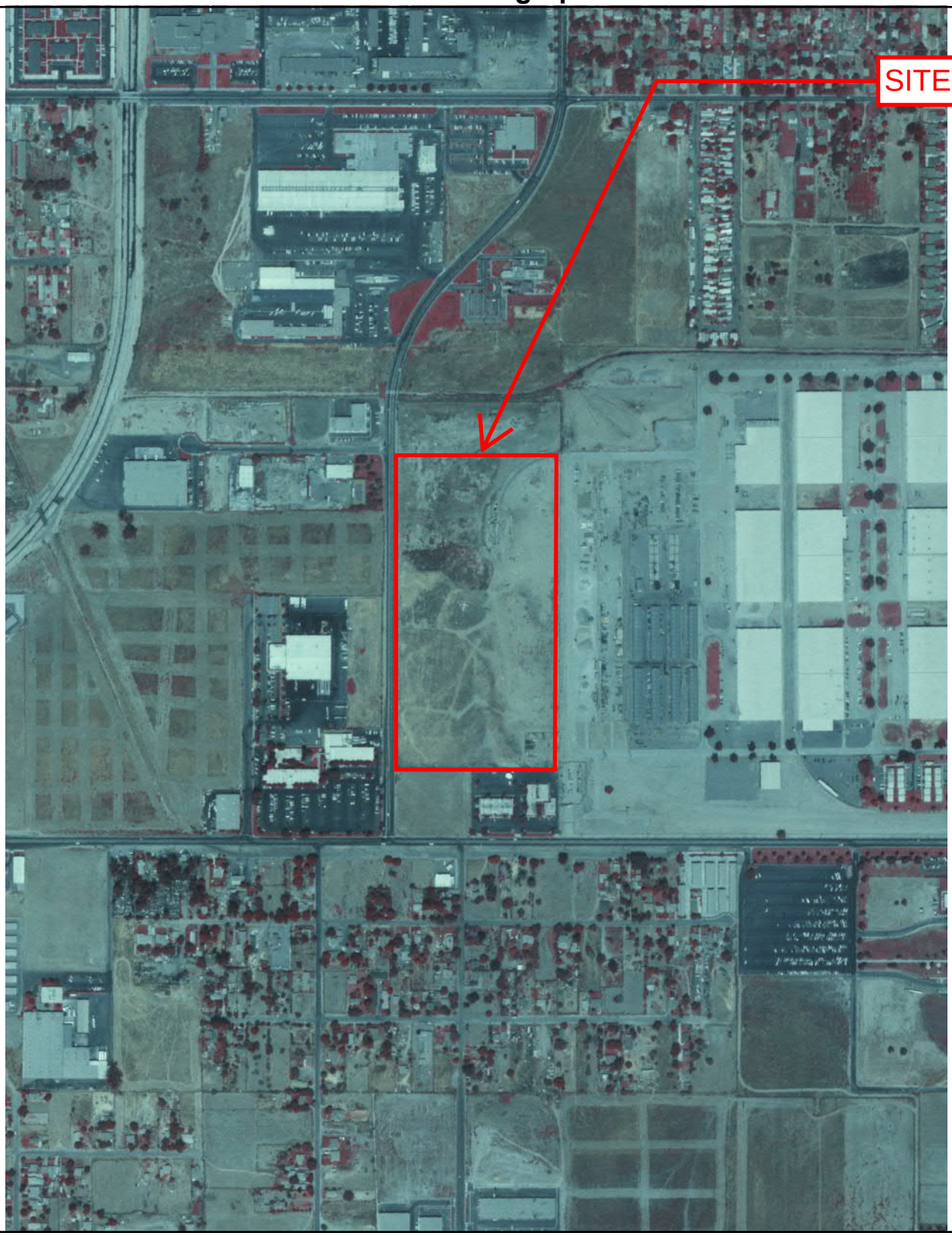


0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1994 AERIAL PHOTOGRAPH	Appendix
Drawn by: DJ	Scale: As Shown		Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA	C
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1994			

Aerial Photograph

1989



0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1989 AERIAL PHOTOGRAPH	Appendix
Drawn by: DJ	Scale: As Shown		Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA	C
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1989			

Aerial Photograph

1985

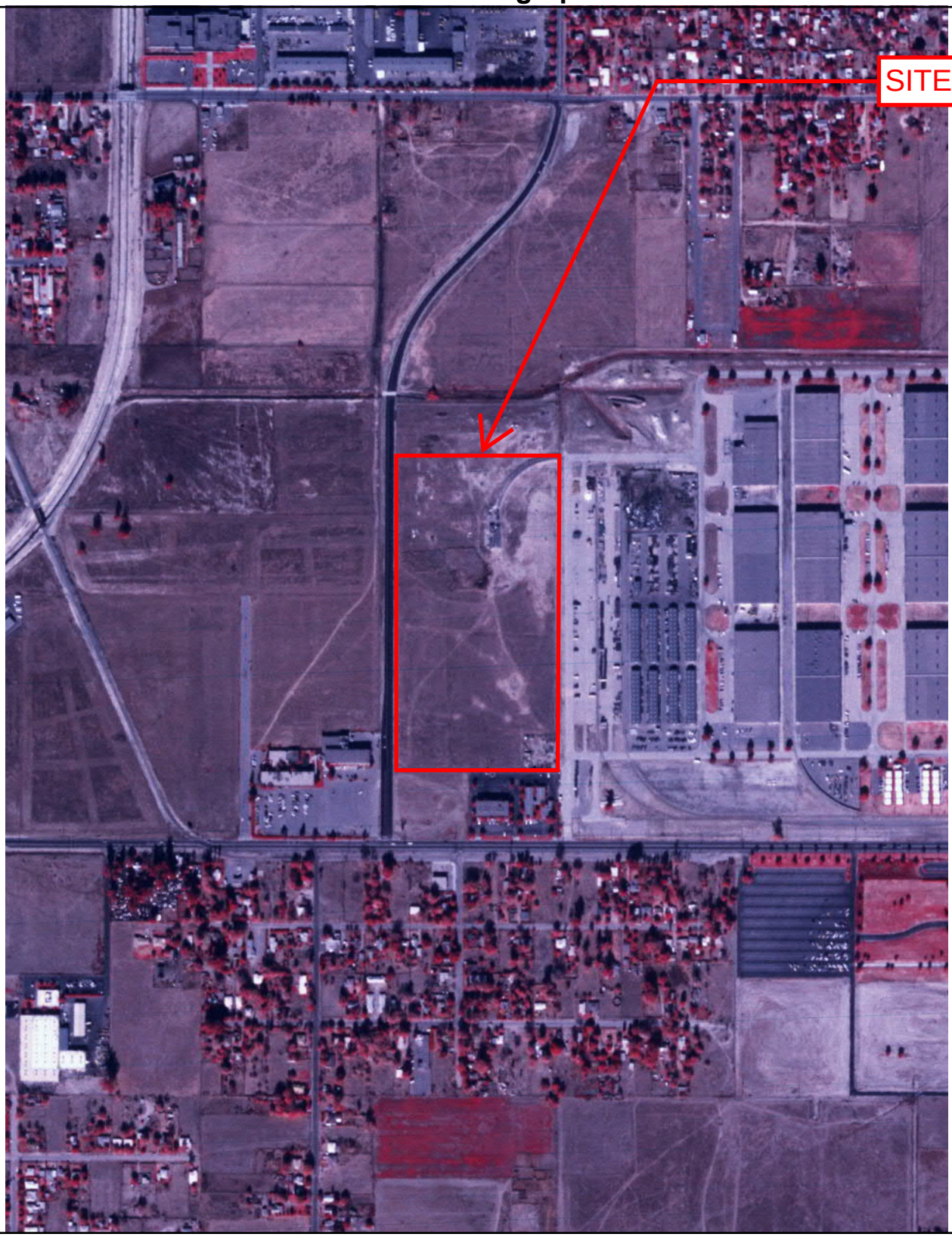
N

0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1985 AERIAL PHOTOGRAPH	Appendix
Drawn by: DJ	Scale: As Shown		Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA	C
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1985			

Aerial Photograph

1975



N

0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1975 AERIAL PHOTOGRAPH	Appendix
Drawn by: DJ	Scale: As Shown		Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA	C
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1975			

Aerial Photograph

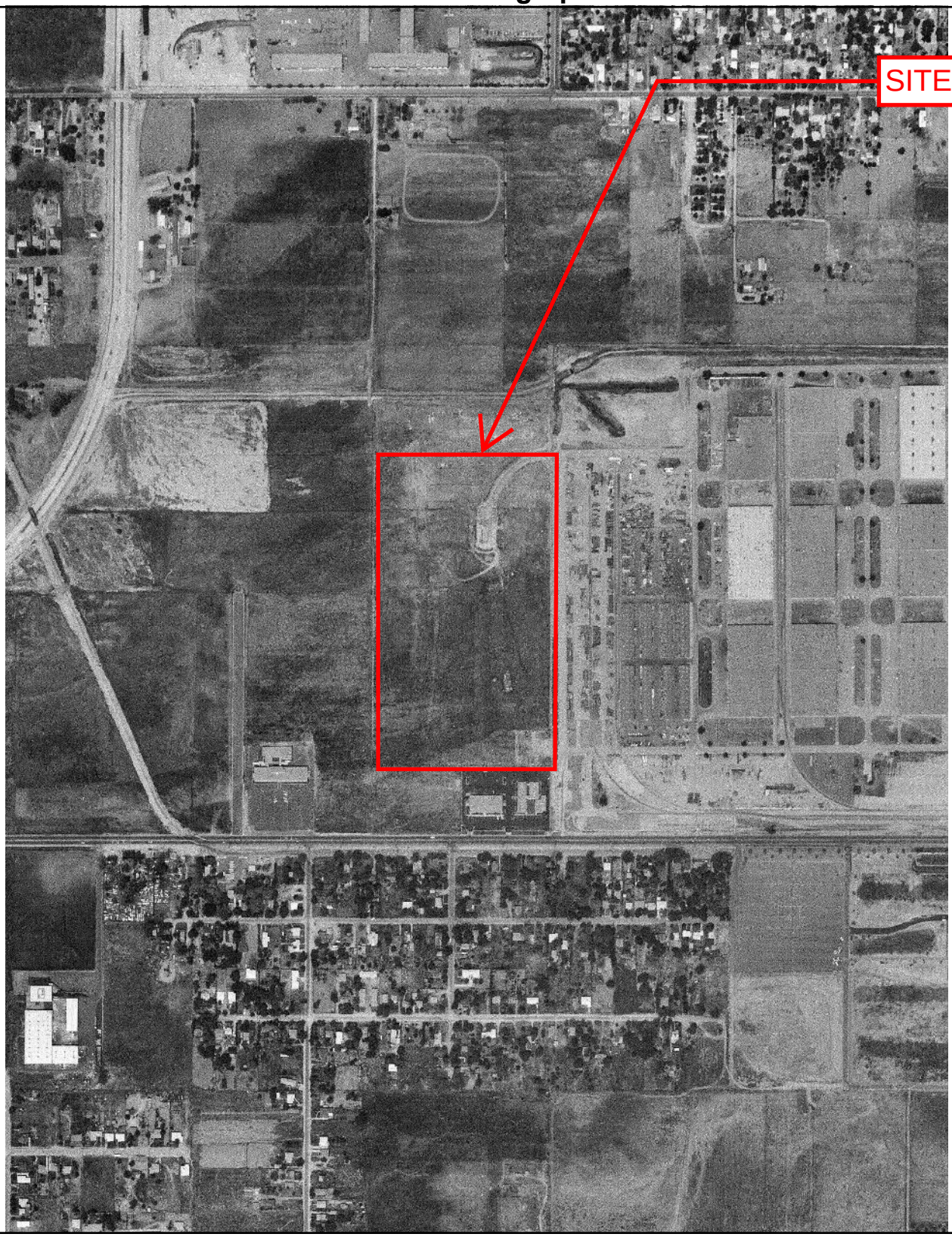
1968

0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1968 AERIAL PHOTOGRAPH Westgate Kohls - Vacant Lant SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA	Appendix C
Drawn by: DJ	Scale: As Shown			
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1968			

Aerial Photograph

1966



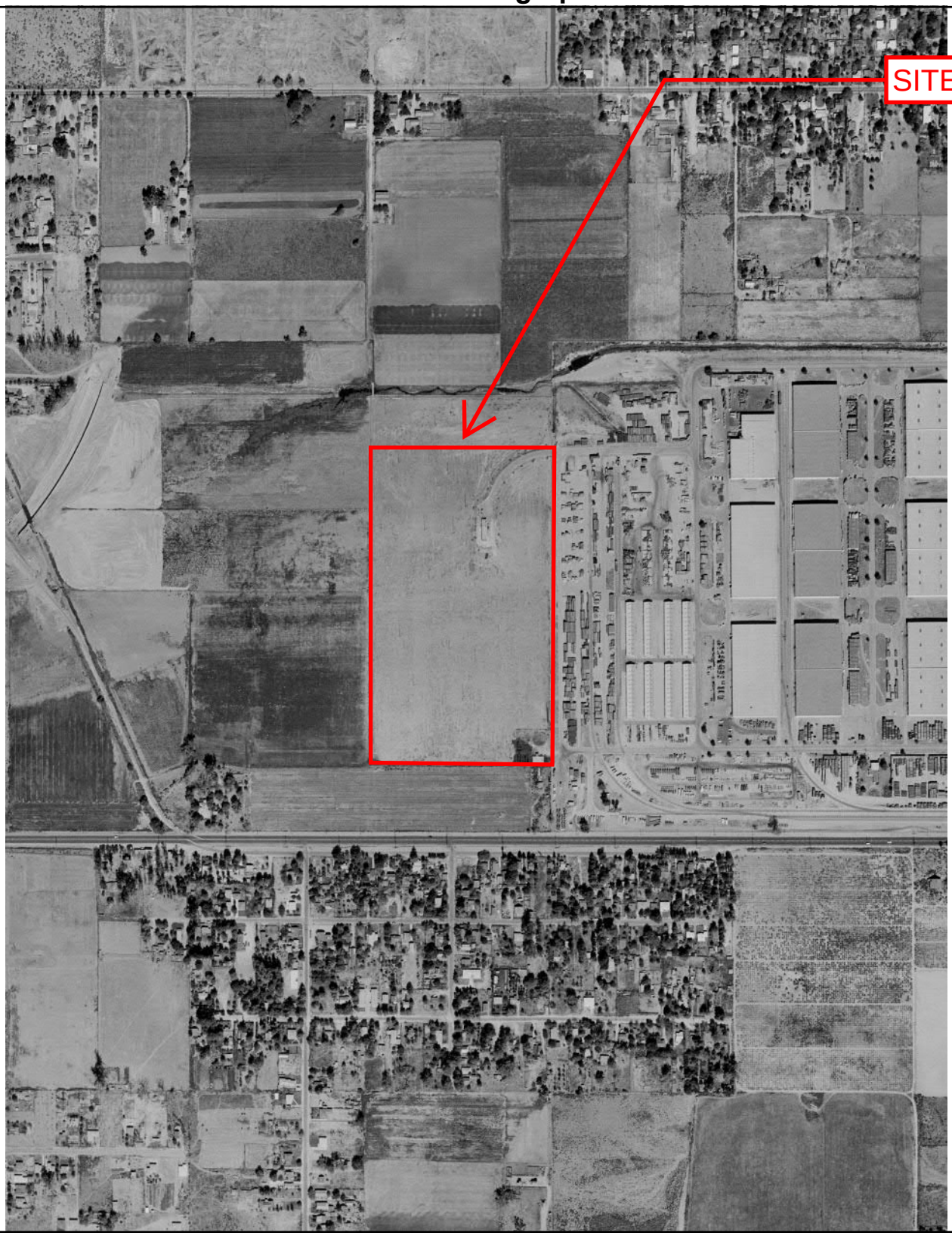
N

0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1966 AERIAL PHOTOGRAPH Westgate Kohls - Vacant Lant SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA	Appendix C
Drawn by: DJ	Scale: As Shown			
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1966			

Aerial Photograph

1959

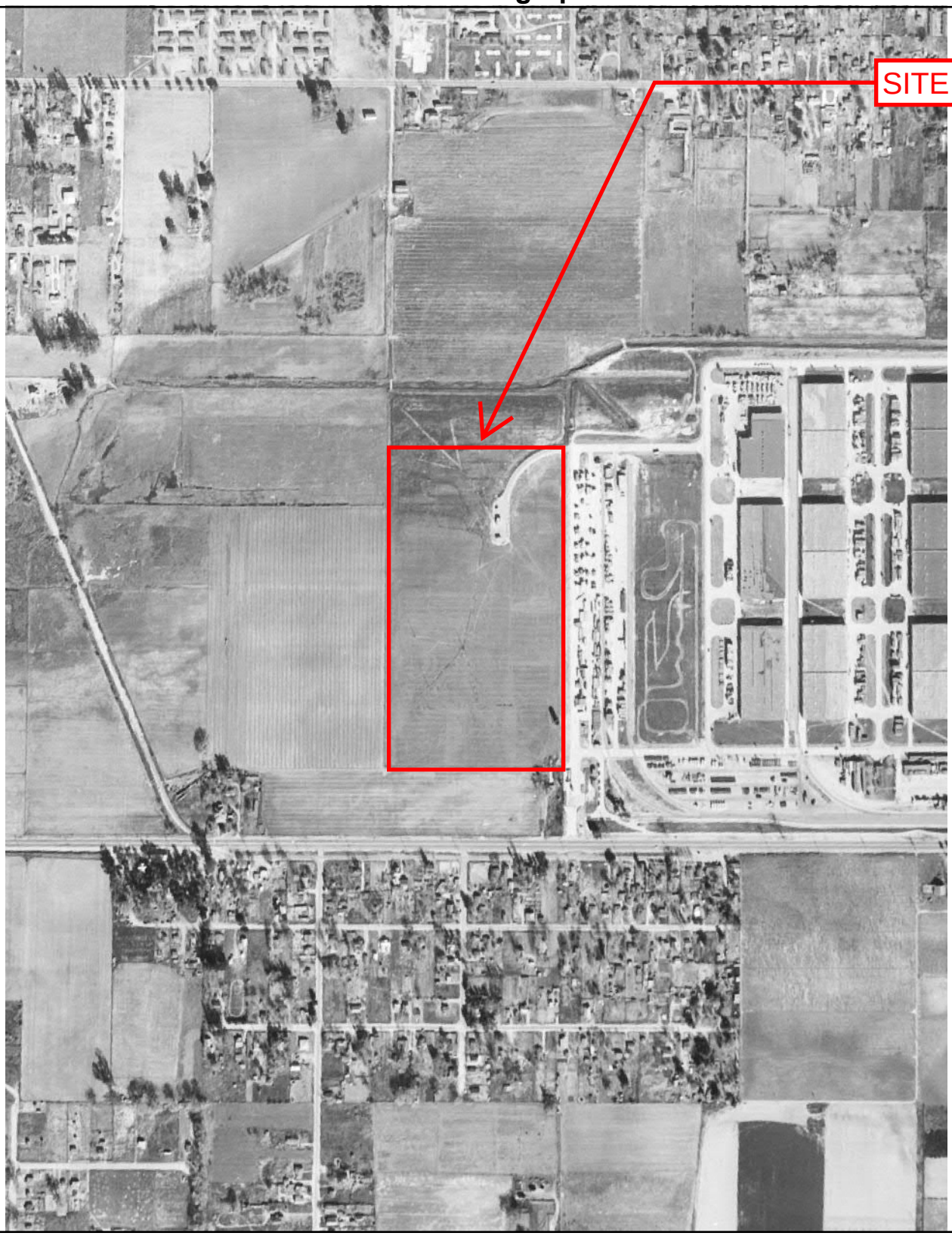


0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1959 AERIAL PHOTOGRAPH Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA	Appendix C
Drawn by: DJ	Scale: As Shown			
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1959			

Aerial Photograph

1953

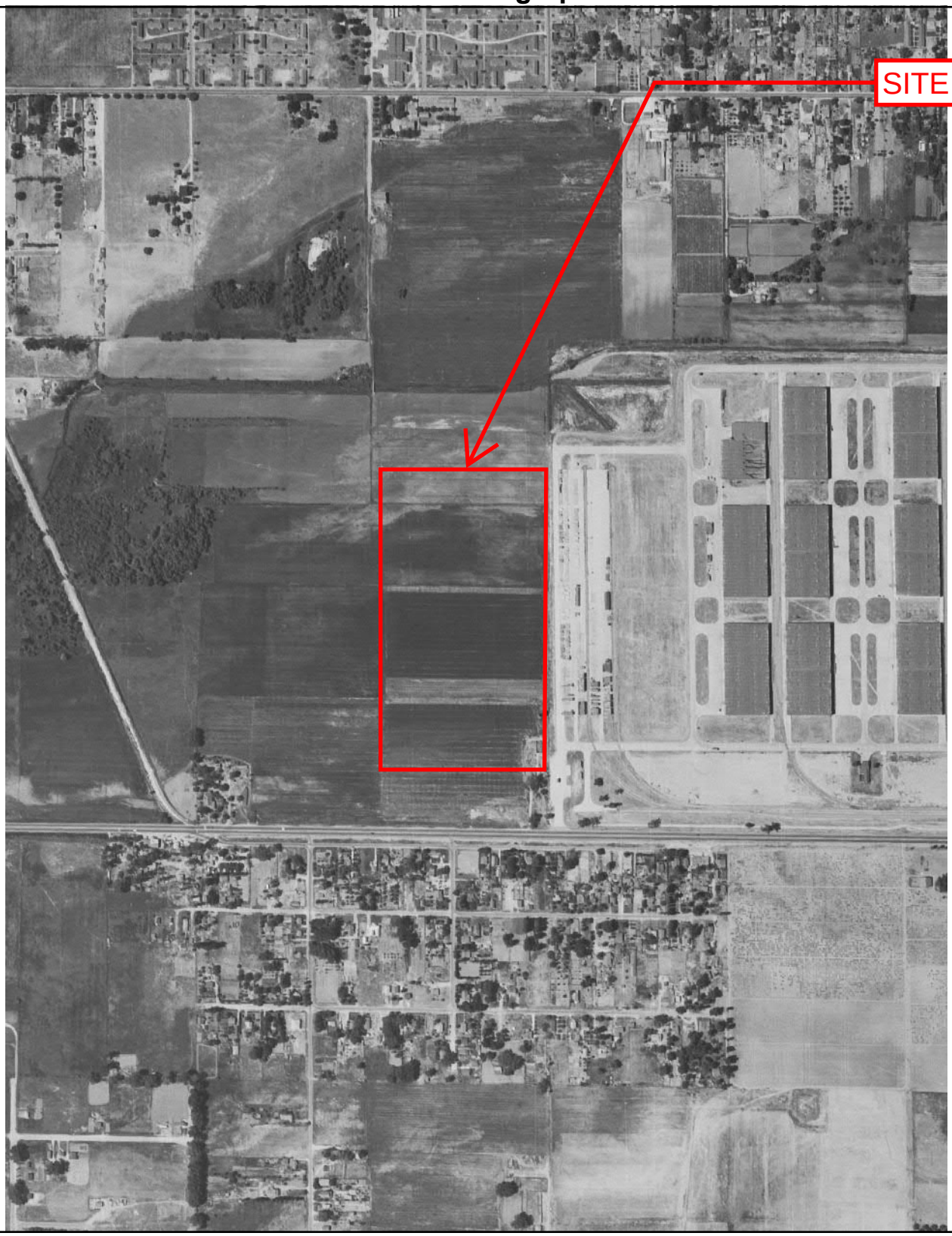


0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1953 AERIAL PHOTOGRAPH Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA	Appendix C
Drawn by: DJ	Scale: As Shown			
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1953			

Aerial Photograph

1949



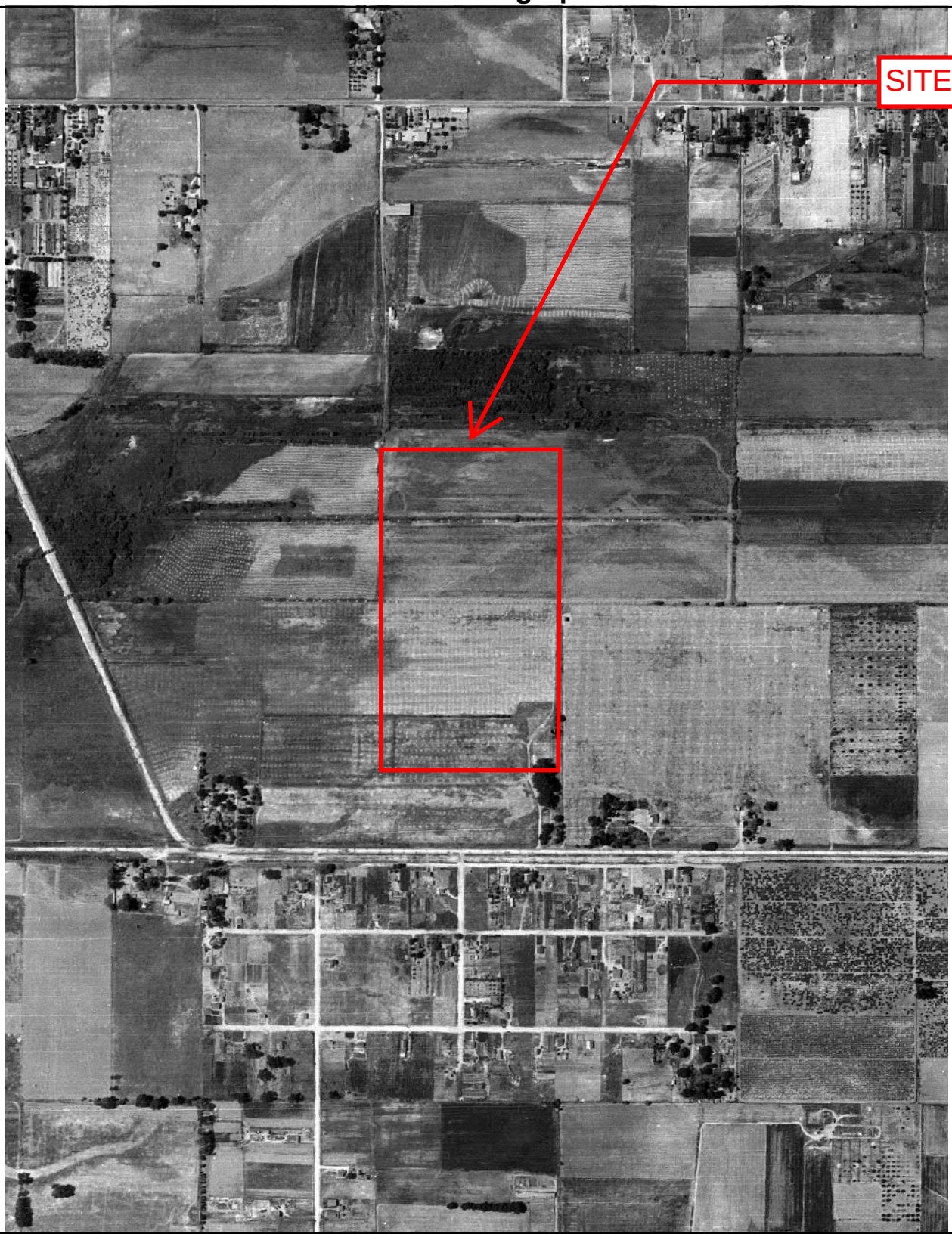
N

0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1949 AERIAL PHOTOGRAPH	Appendix
Drawn by: DJ	Scale: As Shown		Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA	C
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1949			

Aerial Photograph

1938



N

0 Feet 500 1000 2000 3000

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1938 AERIAL PHOTOGRAPH	Appendix
Drawn by: DJ	Scale: As Shown		Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino,San Bernardino County,CA	C
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1938			

Westgate Kohls

SEC of S Lena Road & Tennis CT Ln

San Bernardino, CA 92408

Inquiry Number: 4746163.4

October 06, 2016

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

10/06/16

Site Name:	Client Name:
Westgate Kohls	Terracon
SEC of S Lena Road & Tennis	2817 McGraw Ave
San Bernardino, CA 92408	Irvine, CA 92606
EDR Inquiry # 4746163.4	Contact: David Jamison

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Terracon were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# NA

Project: 60167416

Coordinates:

Latitude:	34.094961 34° 5' 42" North
Longitude:	-117.269095 -117° 16' 9" West
UTM Zone:	Zone 11 North
UTM X Meters:	475177.31
UTM Y Meters:	3772717.82
Elevation:	1040.00' above sea level

Maps Provided:

2012	1898, 1899
1980	1896
1973	
1967	
1954	
1943	
1938	
1901	

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2016 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

Topo Sheet Key

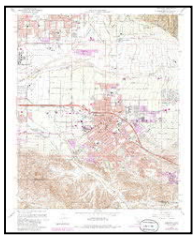
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets

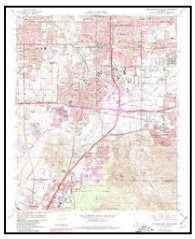
Redlands
2012
7.5-minute, 24000

San Bernardino South
2012
7.5-minute, 24000

1980 Source Sheets

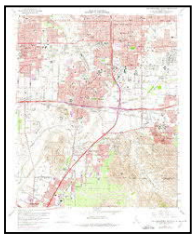


Redlands
1980
7.5-minute, 24000
Photo Revised 1980
Aerial Photo Revised 1978

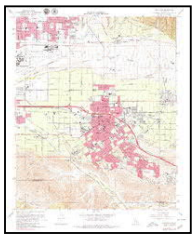


San Bernardino South
1980
7.5-minute, 24000
Photo Revised 1980
Aerial Photo Revised 1979

1973 Source Sheets

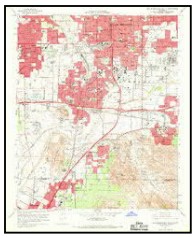


San Bernardino South
1973
7.5-minute, 24000
Photo Revised 1973
Aerial Photo Revised 1973

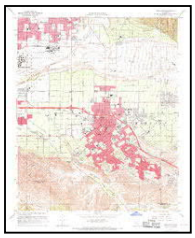


Redlands
1973
7.5-minute, 24000
Photo Inspected 1973
Aerial Photo Revised 1973

1967 Source Sheets



San Bernardino South
1967
7.5-minute, 24000
Aerial Photo Revised 1966

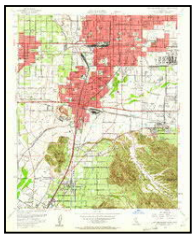


Redlands
1967
7.5-minute, 24000
Aerial Photo Revised 1966

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1954 Source Sheets



San Bernardino South
1954
7.5-minute, 24000
Aerial Photo Revised 1952

Redlands
1954
7.5-minute, 24000
Aerial Photo Revised 1952

1943 Source Sheets

Colton
1943
7.5-minute, 31680

1938 Source Sheets

Colton
1938
7.5-minute, 31680

1901 Source Sheets

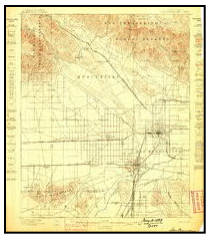
San Bernardino
1901
15-minute, 62500

Redlands
1901
15-minute, 62500

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1898, 1899 Source Sheets



San Bernardino
1898
15-minute, 62500

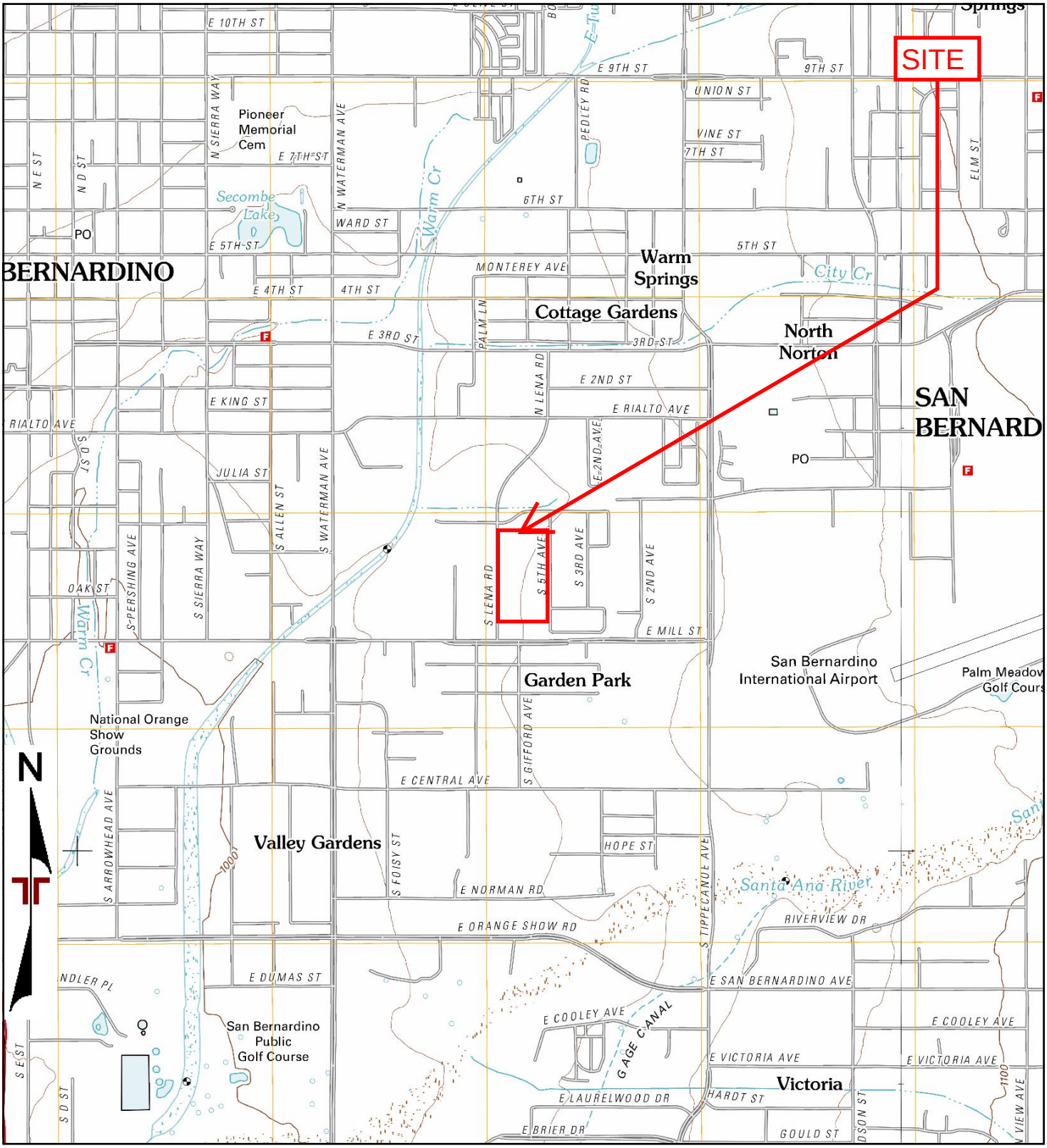
Redlands
1899
15-minute, 62500

1896 Source Sheets

San Bernardino
1896
15-minute, 62500

Topographic Map

2012



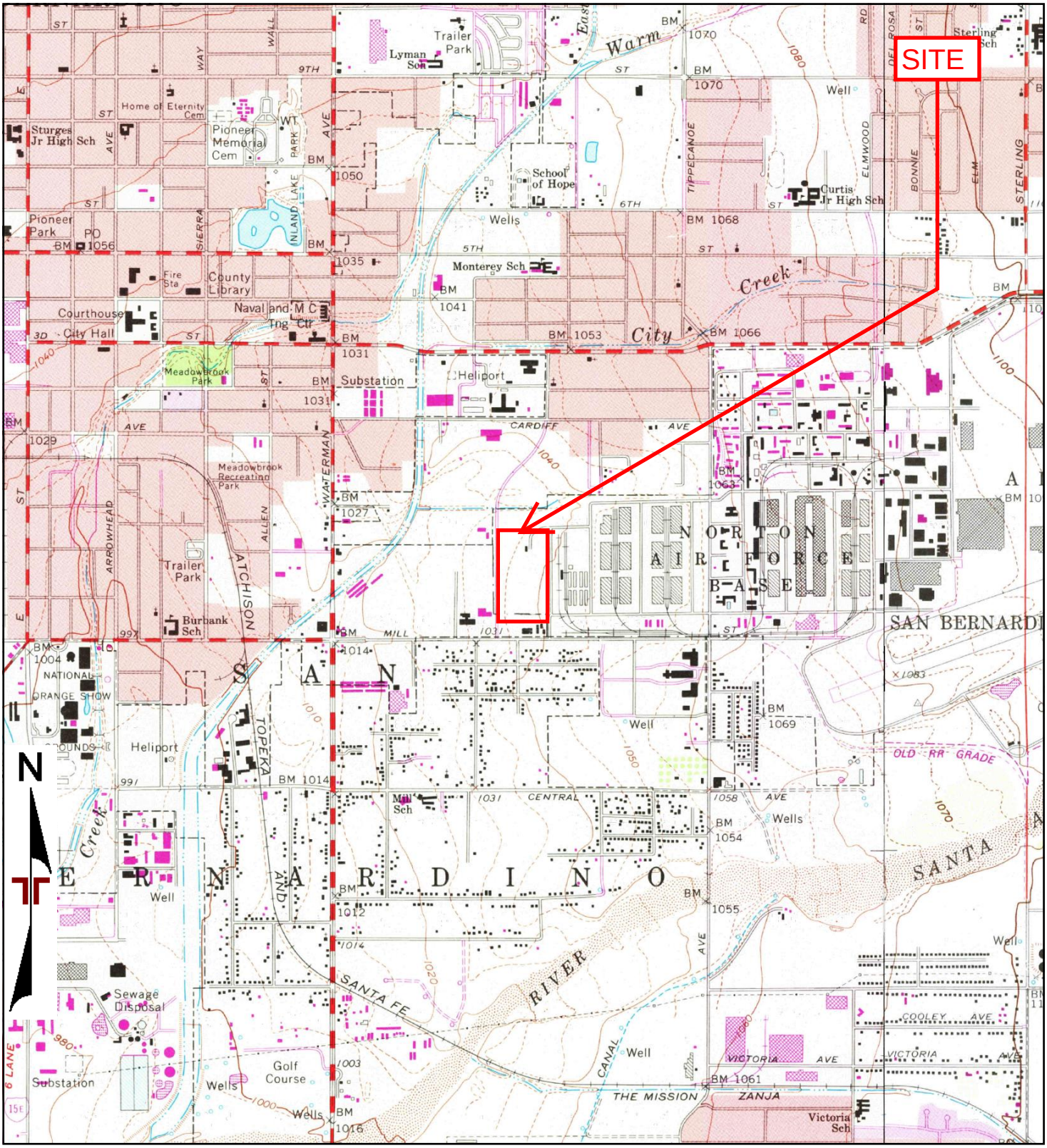
TP, San Bernardino South, 2012, 7.5-minute
SE, Redlands, 2012, 7.5-minute

0 Miles 0.25 0.5 1 1.5

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	2012 TOPOGRAPHIC MAP Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino, San Bernardino County, California	Appendix C
Drawn by: DJ	Scale: As Shown			
Checked by: CAP	File Name:			
Approved by: CAP	Date: 2012			

Topographic Map

1980



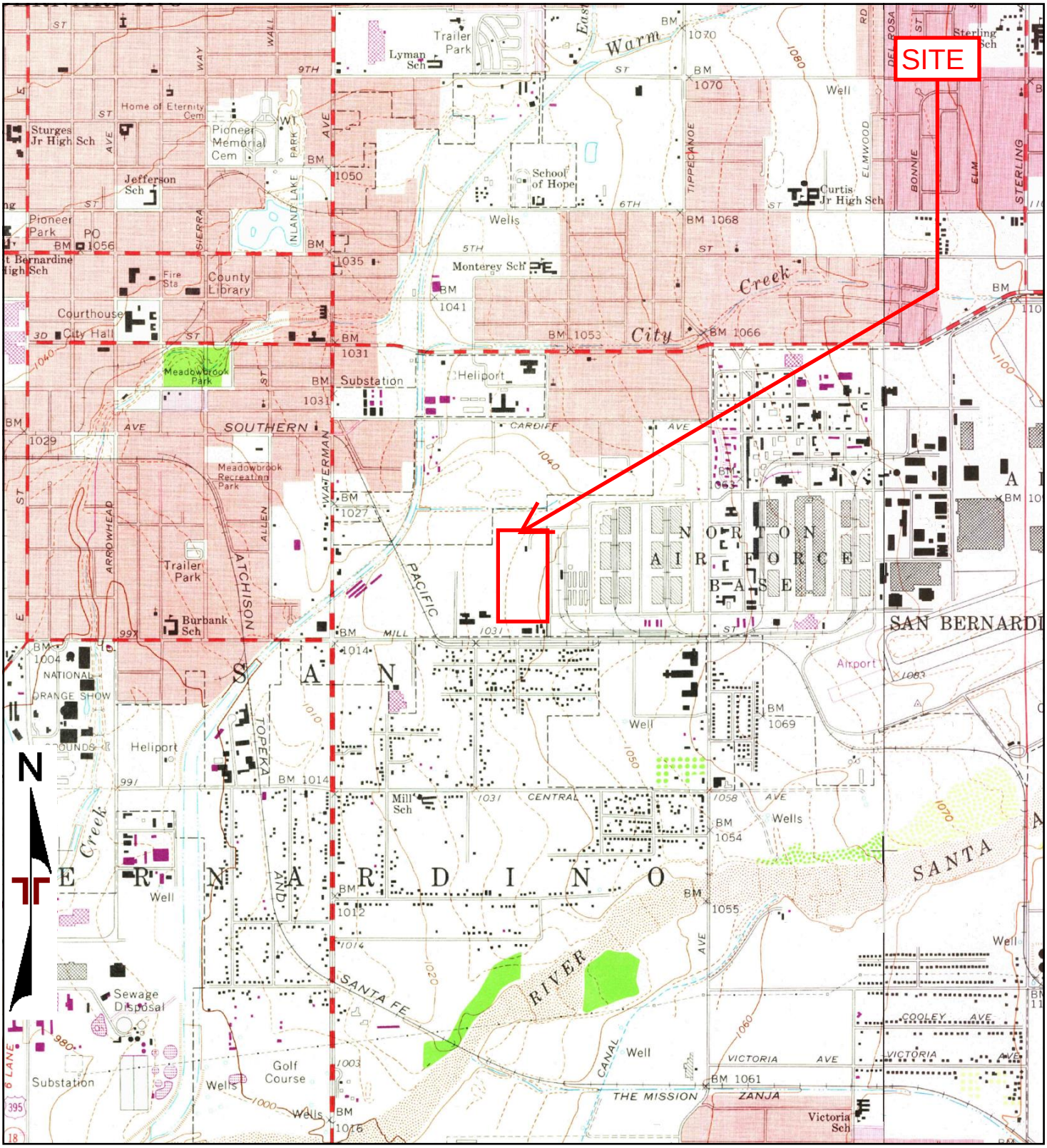
TP, San Bernardino South, 1980, 7.5-minute
SE, Redlands, 1980, 7.5-minute

0 Miles 0.25 0.5 1 1.5

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1980 TOPOGRAPHIC MAP Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino, San Bernardino County, California	Appendix C
Drawn by: DJ	Scale: As Shown			
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1980			

Topographic Map

1973



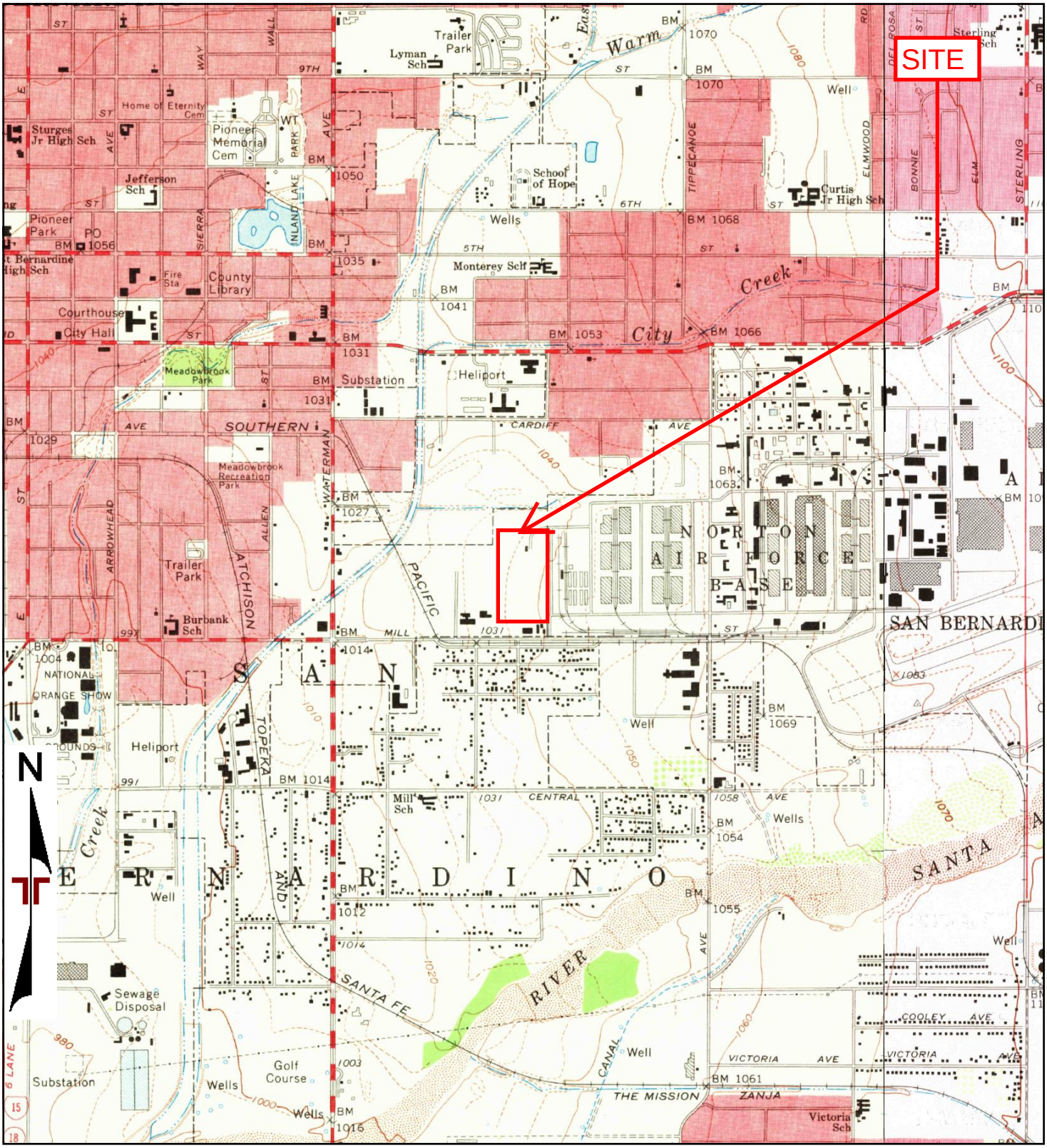
TP, San Bernardino South, 1973, 7.5-minute
SE, Redlands, 1973, 7.5-minute

0 Miles 0.25 0.5 1 1.5

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1973 TOPOGRAPHIC MAP Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino, San Bernardino County, California	Appendix C
Drawn by: DJ	Scale: As Shown			
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1973			

Topographic Map

1967



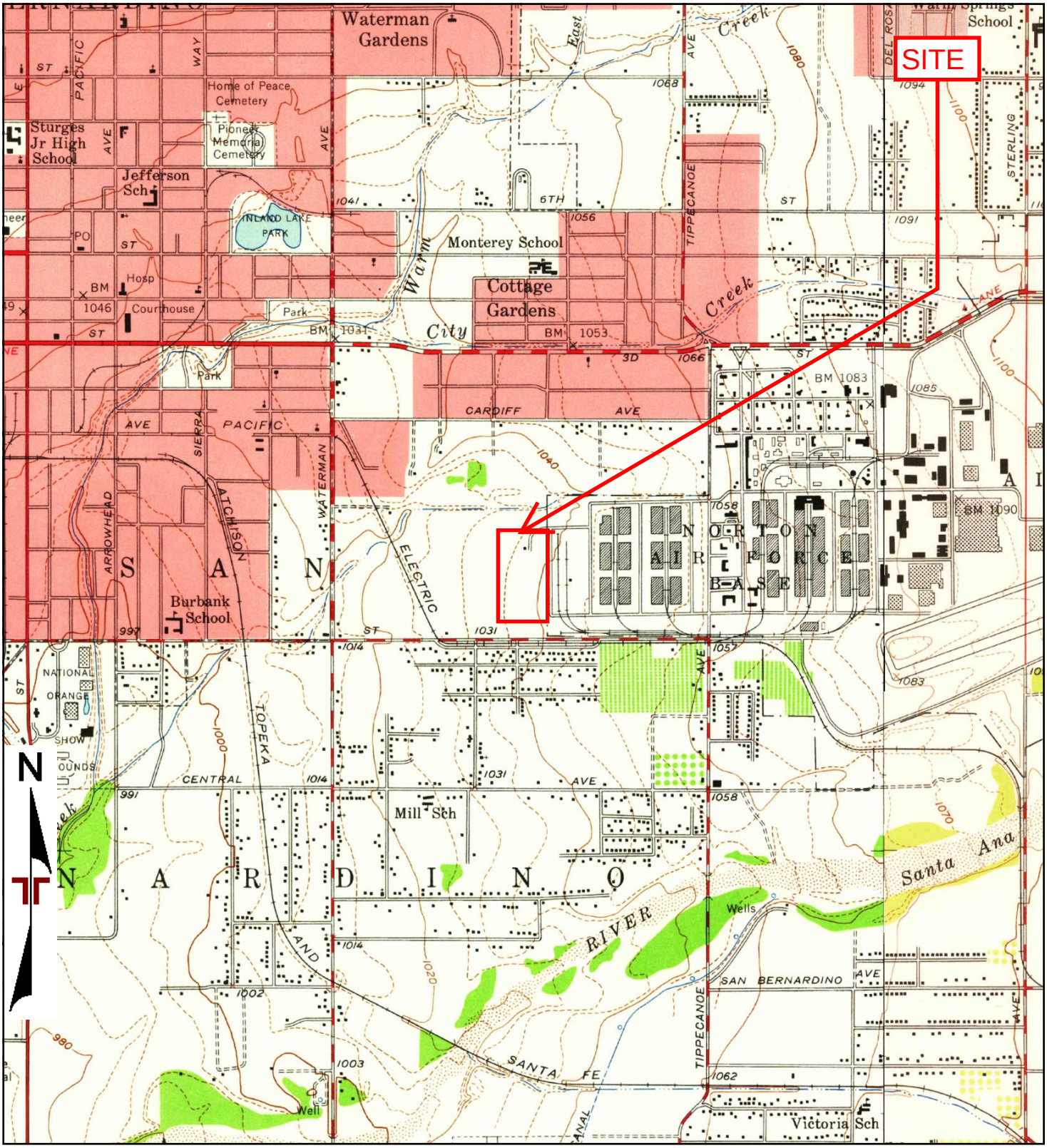
TP, San Bernardino South, 1967, 7.5-minute
SE, Redlands, 1967, 7.5-minute

0 Miles 0.25 0.5 1 1.5

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1967 TOPOGRAPHIC MAP Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino, San Bernardino County, California	Appendix C
Drawn by: DJ	Scale: As Shown			
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1967			

Topographic Map

1954



TP, San Bernardino South, 1954, 7.5-minute
SE, Redlands, 1954, 7.5-minute

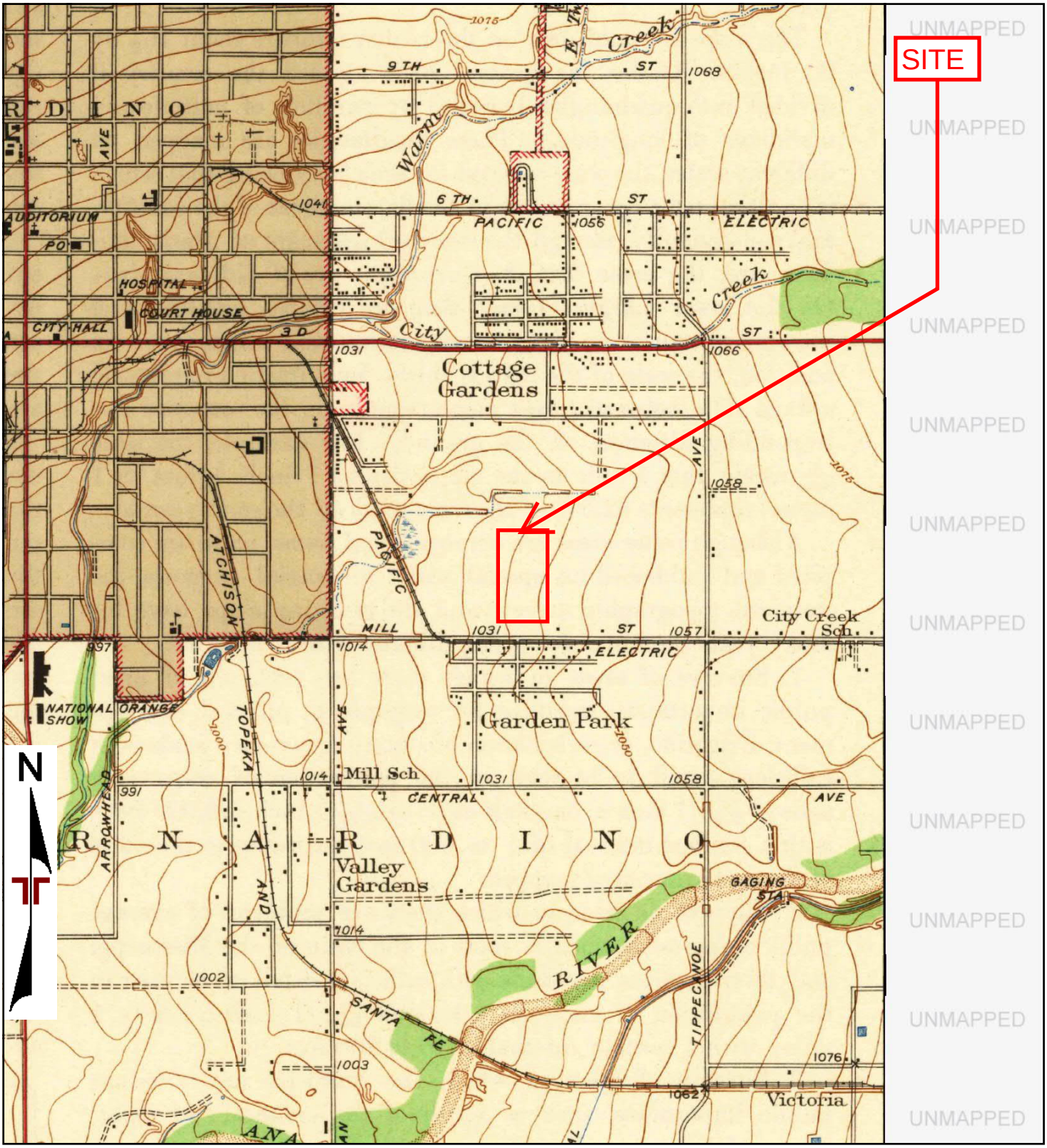
0 Miles 0.25 0.5 1 1.5

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1954 TOPOGRAPHIC MAP Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino, San Bernardino County, California
Drawn by: DJ	Scale: As Shown		
Checked by: CAP	File Name:		
Approved by: CAP	Date: 1954		

Appendix C

Topographic Map

1943



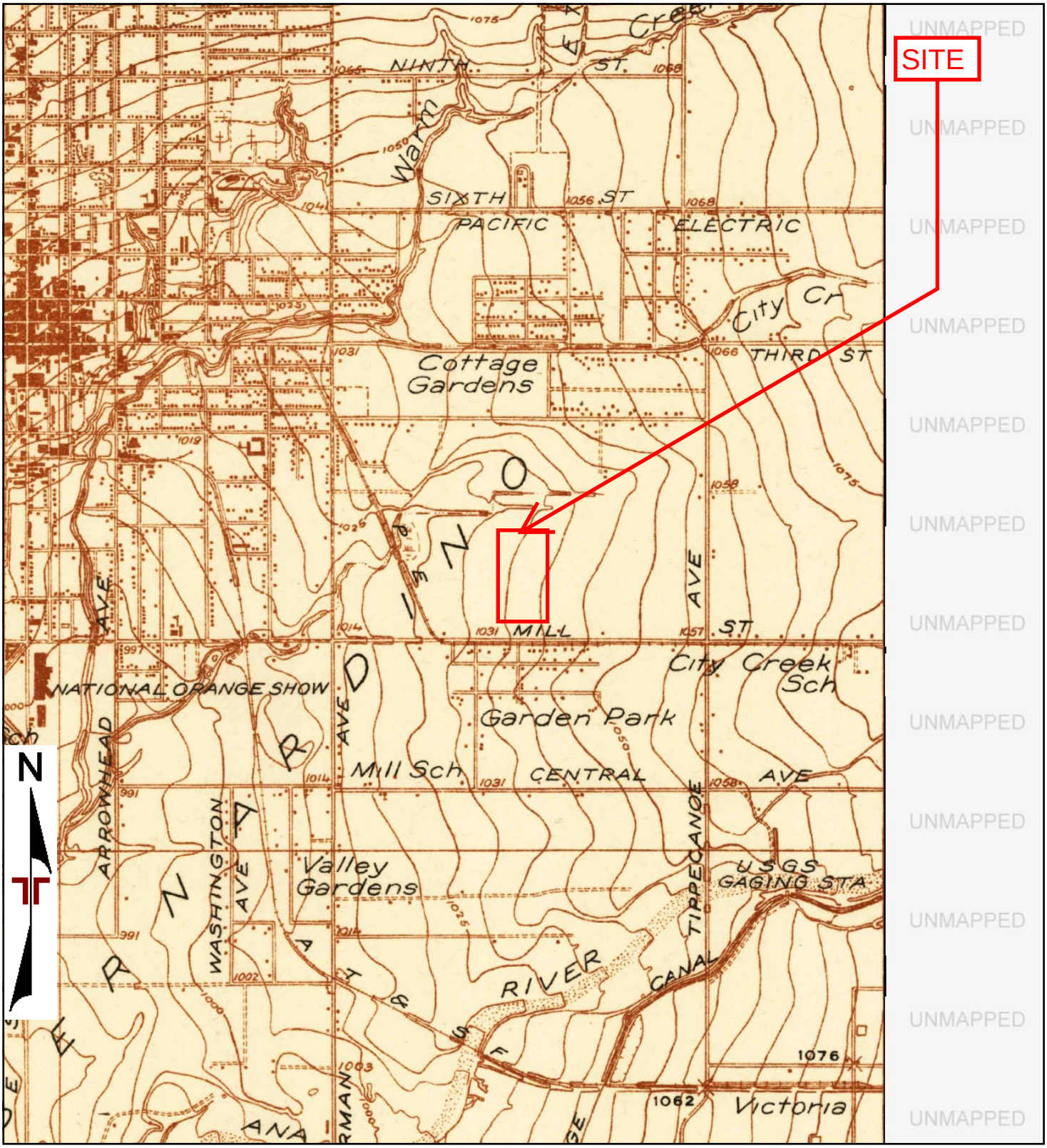
TP, Colton, 1943, 7.5-minute

0 Miles 0.25 0.5 1 1.5

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1943 TOPOGRAPHIC MAP Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino, San Bernardino County, California	Appendix C
Drawn by: DJ	Scale: As Shown			
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1943			

Topographic Map

1938



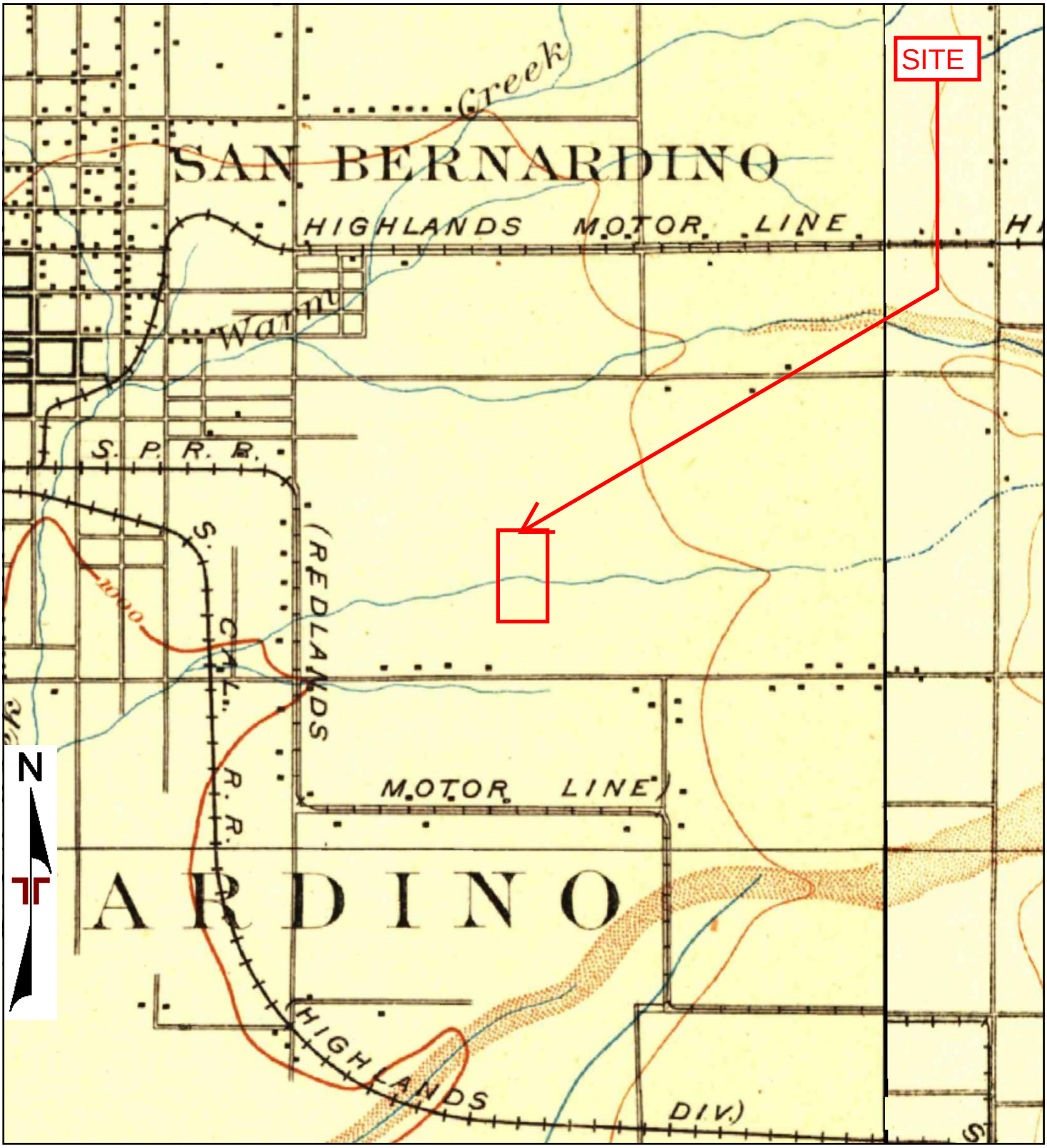
TP, Colton, 1938, 7.5-minute

0 Miles 0.25 0.5 1 1.5

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1938 TOPOGRAPHIC MAP Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino, San Bernardino County, California	Appendix C
Drawn by: DJ	Scale: As Shown			
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1938			

Topographic Map

1901



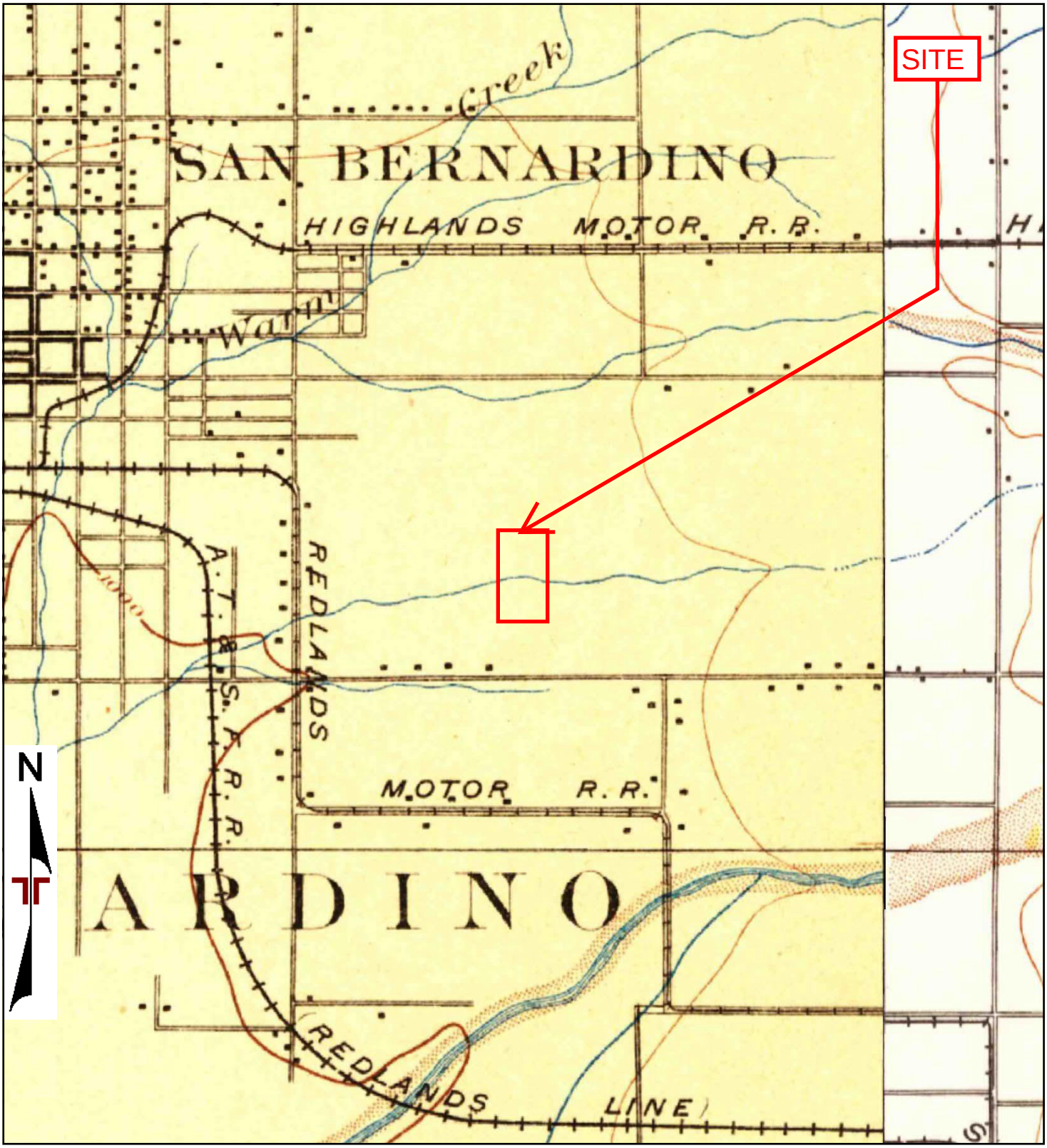
TP, San Bernardino, 1901, 15-minute
E, Redlands, 1901, 15-minute

0 Miles 0.25 0.5 1 1.5

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1901 TOPOGRAPHIC MAP Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino, San Bernardino County, California	Appendix C
Drawn by: DJ	Scale: As Shown			
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1901			

Topographic Map

1898, 1899



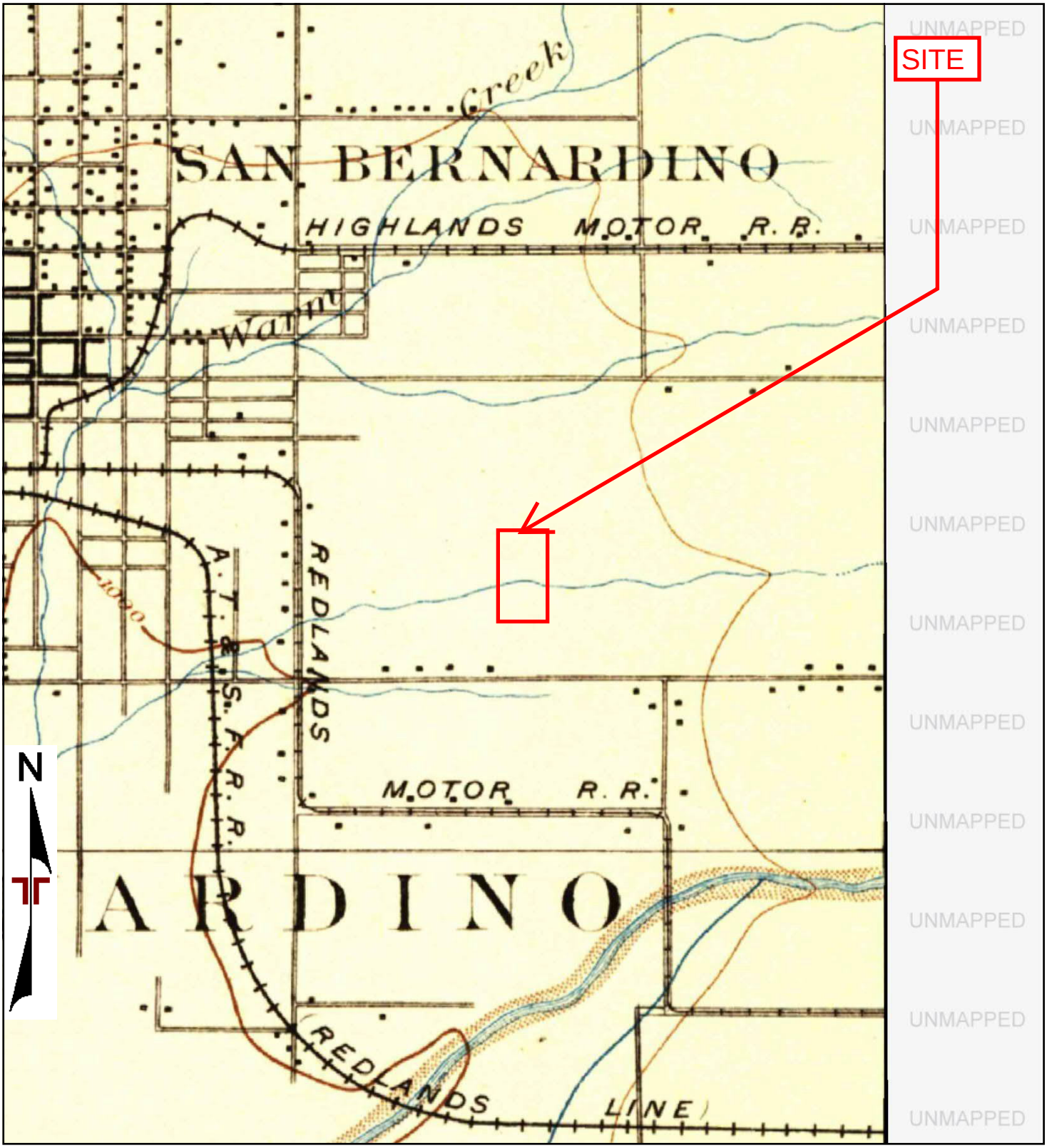
TP, San Bernardino, 1898, 15-minute
E, Redlands, 1899, 15-minute

0 Miles 0.25 0.5 1 1.5

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1898, 1899 TOPOGRAPHIC MAP Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino, San Bernardino County, California	Appendix C
Drawn by: DJ	Scale: As Shown			
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1898, 1899			

Topographic Map

1896



TP, San Bernardino, 1896, 15-minute

0 Miles 0.25 0.5 1 1.5

Project Manager: DJ	Project No. 60167416	Terracon 2817 McGaw Ave Irvine, CA 92614	1896 TOPOGRAPHIC MAP Westgate Kohls - Vacant Land SEC of S Lena Road & Tennis Court Lane San Bernardino, San Bernardino County, California	Appendix C
Drawn by: DJ	Scale: As Shown			
Checked by: CAP	File Name:			
Approved by: CAP	Date: 1896			

Westgate Kohls

SEC of S Lena Road & Tennis CT Ln

San Bernardino, CA 92408

Inquiry Number: 4746163.3

October 06, 2016

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

10/06/16

Site Name:	Client Name:
Westgate Kohls	Terracon
SEC of S Lena Road & Tennis	2817 McGraw Ave
San Bernardino, CA 92408	Irvine, CA 92606
EDR Inquiry # 4746163.3	Contact: David Jamison

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Terracon were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 374F-47EE-90E0

PO # NA

Project 60167416

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 374F-47EE-90E0

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

The Sanborn Library LLC Since 1866™

Limited Permission To Make Copies

Terracon (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2016 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

Westgate Kohls
SEC of S Lena Road & Tennis CT Ln
San Bernardino, CA 92408

Inquiry Number: 4746163.5
October 06, 2016

The EDR-City Directory Abstract

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction orforecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2016 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc. or its affiliates is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1922 through 2013. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 1980 feet of the target property.

A summary of the information obtained is provided in the text of this report.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Year	Source	TP	Adjoining	Text Abstract	Source Image
2013	Cole Information Services	-	X	X	-
2008	Haines Company, Inc.	-	X	X	-
2003	Haines & Co Publishers	-	X	X	-
2002	Cole Information Services	-	-	-	-
1996	GTE Street Address Directory	-	X	X	-
1995	GTE Directories	-	-	-	-
1991	GTE California Incorporated	-	X	X	-
1990	GTE	-	X	X	-
1985	GTE Directories	-	-	-	-
1981	General Telephone Company of California	-	X	X	-
1980	GTE	-	-	-	-
1975	General Telephone Company of California	-	X	X	-
	GTE Directories	-	X	X	-
	Pacific Telephone Co	-	X	X	-
1970	General Telephone Company of California	-	X	X	-
1965	General Telephone Company of California	-	X	X	-
1964	Luskey Brothers & Co	-	-	-	-
1961	Luskey Brothers& Co Publishers	-	-	-	-
1960	Luskey Brothers & Co Publishers	-	-	-	-
1956	General Telephone Company Publishers	-	-	-	-
1955	Luskey Brothers& Co Publishers	-	X	X	-
1951	Los Angeles Directory Co Publishers	-	X	X	-

EXECUTIVE SUMMARY

Year	Source	TP	Adjoining	Text Abstract	Source Image
1950	The Pacific Telephone and Telegraph Co	-	-	-	-
1949	San Bernardino Directory Co. Publishers	-	X	X	-
1946	Los Angeles Directory Company Publishers	-	-	-	-
1945	Southern California Telephone Company	-	X	X	-
1942	San Bernardino Directory Co Publisher	-	X	X	-
1941	Associated Telephone Company Limited	-	-	-	-
1940	Los Angeles Directory Co.	-	X	X	-
1938	Los Angeles Directory Co.	-	X	X	-
1936	San Bernardino Directory Co Publisher	-	X	X	-
1934	Los Angeles Directory Co.	-	-	-	-
1931	Los Angeles Directory Company Publishers	-	X	X	-
1930	San Bernardino Directory Co Publisher	-	X	X	-
1926	Los Angeles Directory Co Publisher	-	X	X	-
	Los Angeles Directory Company	-	X	X	-
	SBC PACIFIC BELL	-	X	X	-
1923	Los Angeles Directory Company	-	X	X	-
1922	R.L. Polk & Co Publishers	-	-	-	-

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

SEC of S Lena Road & Tennis CT Ln
San Bernardino, CA 92408

FINDINGS DETAIL

Target Property research detail.

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

2 ERIALTO AVE

249 2 ERIALTO AVE

Year	Uses	Source
1975	Lobatoz Lauie	Pacific Telephone Co

2 NHERRNGTN AVE

291 2 NHERRNGTN AVE

Year	Uses	Source
1970	Cutler Fred D	General Telephone Company of California

2 SLENORE AVE

245 2 SLENORE AVE

Year	Uses	Source
1970	Griffee Grant	General Telephone Company of California

2ND S

243 2ND S

Year	Uses	Source
1951	Martinez Jess	Los Angeles Directory Co Publishers

319 2ND S

Year	Uses	Source
1951	Belmudes Sami	Los Angeles Directory Co Publishers

2ND AVE

149 2ND AVE

Year	Uses	Source
1931	Merchant Jos T Florence do clnr	Los Angeles Directory Company Publishers
1926	Upland Cleaners Jos Bell	SBC PACIFIC BELL

FINDINGS

152 2ND AVE

Year	Uses	Source
1938	Upland Feed & Fuel Co J C Meh J P Bert B L Decker	Los Angeles Directory Co.
1926	Kienzle J Henry sht mitl wkr	SBC PACIFIC BELL

155 2ND AVE

Year	Uses	Source
1938	TYLER PAINT STORE Wm Tyler Indianu Paints and Lacquers Wall Paper Painting Contractor	Los Angeles Directory Co.

161 2ND AVE

Year	Uses	Source
1931	Adams Lafayette Lucy gro	Los Angeles Directory Company Publishers

167 2ND AVE

Year	Uses	Source
1931	Wilson Chas S billiards	Los Angeles Directory Company Publishers

170 2ND AVE

Year	Uses	Source
1931	Upland News The H M Guy editor V V Paine mgr	Los Angeles Directory Company Publishers
1926	Upland News Tihe W E Westland editor and prop	SBC PACIFIC BELL

171 2ND AVE

Year	Uses	Source
1938	CHOWNING VICTOR Jeweler and Watch Repairing	Los Angeles Directory Co.

175 2ND AVE

Year	Uses	Source
1931	Bussey Robt S Dora cigars	Los Angeles Directory Company Publishers

176 2ND AVE

Year	Uses	Source
1926	Buhl Lewis C Irene real est	SBC PACIFIC BELL

177 2ND AVE

Year	Uses	Source
1926	Davis Harry E Irma restr	SBC PACIFIC BELL

FINDINGS

181 2ND AVE

Year	Uses	Source
1926	Long Perry 0 Eva barber	SBC PACIFIC BELL
	Dinger Clas LA Grixtrudo M ranclher	SBC PACIFIC BELL
	Smith Jas P Cora cigars	SBC PACIFIC BELL

182 2ND AVE

Year	Uses	Source
1926	Mowers Frank C Ila M barber	SBC PACIFIC BELL

183 2ND AVE

Year	Uses	Source
1931	Grahame J Lynward Maude ins	Los Angeles Directory Company Publishers

184 2ND AVE

Year	Uses	Source
1938	Caveness Helen H Mrs womens do	Los Angeles Directory Co.

186 2ND AVE

Year	Uses	Source
1931	Klindt Robt M Jessie gro	Los Angeles Directory Company Publishers

195 2ND AVE

Year	Uses	Source
1940	FIRST NATIONAL BANK OF UPLAND Chas V Barr Pres Harlow S Wilson Exec V Pres R F Lemon V Pres Allan S Barr Cashier Clyde D Du Vall Asst Cashier	Los Angeles Directory Co.
1938	FIRST NATIONAL BANK OF UPLAND Chas V Barr Pres Harlow S Wison Exec V Pres R F Lemon V Pres Allan S Barr Casi Ler Clyde D Du Vall Asat Cashier	Los Angeles Directory Co.

216 2ND AVE

Year	Uses	Source
1931	Booth Wm F Hattie notions	Los Angeles Directory Company Publishers
1923	Browning John B Grace transfer	Los Angeles Directory Company

228 2ND AVE

Year	Uses	Source
1931	Upland Dry Cleaners Fred M Allen mgr	Los Angeles Directory Company Publishers
1923	Mc Lean Hugh I Ella shoes	Los Angeles Directory Company

FINDINGS

233 2ND AVE

Year	Uses	Source
1931	I O O F Hall	Los Angeles Directory Company Publishers
1923	I 0 0 F Hall	Los Angeles Directory Company

237 2ND AVE

Year	Uses	Source
1923	Thudium Gertrude Mrs ml	Los Angeles Directory Company

238 2ND AVE

Year	Uses	Source
1931	Mac Lean Hugh Ella shoe repr	Los Angeles Directory Company Publishers
1923	Hermes George A F Hermes & Sons	Los Angeles Directory Company
	Hermes F & Sons Feder F H and G A tailors	Los Angeles Directory Company
	Hermes Fedor H F Hermes & Sons	Los Angeles Directory Company
	Hermes Fedor F Hermes & Sons	Los Angeles Directory Company

239 2ND AVE

Year	Uses	Source
1923	Upland Book Store Elizabeth and Teresa Mc Quillen	Los Angeles Directory Company
	Camp Baldy Co	Los Angeles Directory Company

251 2ND AVE

Year	Uses	Source
1931	Engel John E Mabel mens furngs	Los Angeles Directory Company Publishers
1923	Littooy Martha wid John	Los Angeles Directory Company
	Littooy Lizzie tailors	Los Angeles Directory Company
	Jenkins May wid James	Los Angeles Directory Company

252 2ND AVE

Year	Uses	Source
1923	Ruedy Hall	Los Angeles Directory Company

273 2ND AVE

Year	Uses	Source
1923	Nelson Joseph M Faye cook	Los Angeles Directory Company
	Phillips Anna M wid John	Los Angeles Directory Company
	Killegan Stephen	Los Angeles Directory Company
	Killegan Nushan	Los Angeles Directory Company
	Killegan Hagob student	Los Angeles Directory Company

FINDINGS

Year	Uses	Source
1923	Foster Charles B Effie apts	Los Angeles Directory Company
	Clark Apartments	Los Angeles Directory Company

277 2ND AVE

Year	Uses	Source
1923	TAverner Clara tchr	Los Angeles Directory Company
	Silcox Robert Susan apts	Los Angeles Directory Company
	Mc Cord Mary tchr	Los Angeles Directory Company
	Kankel 0 W	Los Angeles Directory Company
	Erixon Lena Mrs	Los Angeles Directory Company

280 2ND AVE

Year	Uses	Source
1923	Bonham Maude restr	Los Angeles Directory Company

285 2ND AVE

Year	Uses	Source
1923	Bryant James E meats	Los Angeles Directory Company

287 2ND AVE

Year	Uses	Source
1940	Ibanez Richd A Eliz lawyer	Los Angeles Directory Co.
1931	Burt Arth W lawyer	Los Angeles Directory Company Publishers
1923	Maroot Kriker gro	Los Angeles Directory Company

290 2ND AVE

Year	Uses	Source
1923	Craig John B Nellie phys	Los Angeles Directory Company
	Weber Arthur L Alban phys	Los Angeles Directory Company
	Williamson Mary C wid Marshall phys	Los Angeles Directory Company

291 2ND AVE

Year	Uses	Source
1923	Weise Frank C	Los Angeles Directory Company
	Snowden Arthur E lab Upland Lemon Growers Assn	Los Angeles Directory Company
	Samels Frank lab Upland Citrus Assn	Los Angeles Directory Company
	Bailey Mark H Mary B brklyr	Los Angeles Directory Company
	Wilson E Fullerton slsmn	Los Angeles Directory Company
	Holcomb M H	Los Angeles Directory Company
	Hamer Block	Los Angeles Directory Company

FINDINGS

Year	Uses	Source
1923	Barnes J W	Los Angeles Directory Company
	Bailey Mary B Mrs furn rms	Los Angeles Directory Company

293 2ND AVE

Year	Uses	Source
1923	Palis August L Ida jwlr	Los Angeles Directory Company

299 2ND AVE

Year	Uses	Source
1940	Hottel Paul G Kath L furn	Los Angeles Directory Co.
1931	Weiss Robt & Co Robt Weiss Irving Klindt hdw	Los Angeles Directory Company Publishers
1923	WEISS BOBERT Robert Weiss & Co	Los Angeles Directory Company
	WEISS ROBERT & CO Robert Weiss Irving Klindt Hardware Stoves and Ranges Builders Supplies Paints and Oils Furniture and Carpets Crockery and Enamel Ware	Los Angeles Directory Company

310 2ND AVE

Year	Uses	Source
1923	Colonial Theatre	Los Angeles Directory Company

320 2ND AVE

Year	Uses	Source
1923	Mengle Claude P Mabel optom	Los Angeles Directory Company

322 2ND AVE

Year	Uses	Source
1931	Hawkey Agnes B Mrs confy	Los Angeles Directory Company Publishers
1923	Mock Oscar H Lelia E conmy	Los Angeles Directory Company

324 2ND AVE

Year	Uses	Source
1931	Detnmers Jas barber	Los Angeles Directory Company Publishers
1923	Walton De Forest L Margaret pianos and piano tuner	Los Angeles Directory Company

327 2ND AVE

Year	Uses	Source
1923	Short John L Alice J	Los Angeles Directory Company
	Short Marian C student	Los Angeles Directory Company
	h	Los Angeles Directory Company

FINDINGS

329 2ND AVE

Year	Uses	Source
1923	Craig Stephen A student	Los Angeles Directory Company
	Craig Lois I student	Los Angeles Directory Company

335 2ND AVE

Year	Uses	Source
1923	Lopez Francisco Guadalupa lab	Los Angeles Directory Company

336 2ND AVE

Year	Uses	Source
1923	Puehler Leonard Katherine rancher	Los Angeles Directory Company
	Puehler Katherine student	Los Angeles Directory Company
	Puehler Rudolph auto mech	Los Angeles Directory Company

360 2ND AVE

Year	Uses	Source
1931	Southern Pacific Co Clyde Whiteley agt	Los Angeles Directory Company Publishers
	Pacific Electric Ry Clyde Whiteley agt	Los Angeles Directory Company Publishers
1923	Ross Auto Electric Shop J M Ross	Los Angeles Directory Company

367 2ND AVE

Year	Uses	Source
1923	Dtiran Damian A Carmen lab Upland Lemon Growers Assn	Los Angeles Directory Company

2ND AVE S

215 2ND AVE S

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

216 2ND AVE S

Year	Uses	Source
2003	CANNON SAFE	Haines & Co Publishers
	ASTRO FAB INC	Haines & Co Publishers

294 2ND AVE S

Year	Uses	Source
2003	WESTERN WOOD SUPPLY	Haines & Co Publishers
	PSYCHO FURNISHINGS	Haines & Co Publishers
	CREATIVE DESIGNS INTERNATL	Haines & Co Publishers

FINDINGS

384 2ND AVE S

Year	Uses	Source
2003	CALIFORNIA REDWOOD	Haines & Co Publishers

5 RANCHO AVE

425 5 RANCHO AVE

Year	Uses	Source
1991	Griffin industrial Supply	GTE California Incorporated

DOOLITTLE AVE S

363 DOOLITTLE AVE S

Year	Uses	Source
2003	SALVATN ARMY THE ADULT RHB CT	Haines & Co Publishers
	SALVATN ARMY THE ADULT RHB CT	Haines & Co Publishers

DOOLITTLE DR

363 DOOLITTLE DR

Year	Uses	Source
1996	SALVATION ARMY THE	GTE Street Address Directory

DOOLITTLE RD

363 DOOLITTLE RD

Year	Uses	Source
1981	PEPSI COLA BTTLNG CO	General Telephone Company of California
	PEPSI COLA BTTLNG CO	General Telephone Company of California

E MILL

499 E MILL

Year	Uses	Source
1975	COCA COLA BOTTLING CO OF SAN BERNARDINO & RIVERSIDE	Pacific Telephone Co

519 E MILL

Year	Uses	Source
1991	Downtown Auto Wrecking	GTE California Incorporated

FINDINGS

521 E MILL

Year	Uses	Source
1975	Beckers Auto Wrecking	Pacific Telephone Co

535 E MILL

Year	Uses	Source
1945	Miller Bros Trailer Pk	Southern California Telephone Company

595 E MILL

Year	Uses	Source
1991	Mill Street Auto Body Shop	GTE California Incorporated

606 E MILL

Year	Uses	Source
1991	Allied Gen I Contracting Inc	GTE California Incorporated
1975	Comprehensive Health Planning Councill Inland Counties	Pacific Telephone Co
	Program	Pacific Telephone Co
	Client Centered Evaluation Model	Pacific Telephone Co
	Medi Cal Field Office	Pacific Telephone Co
	CALIFORNIA STATE OF HEALTH DEPT Community Services Section	Pacific Telephone Co

633 E MILL

Year	Uses	Source
1975	Baker Mary	Pacific Telephone Co

656 E MILL

Year	Uses	Source
1945	Merrifield Margaret r	Southern California Telephone Company

677 E MILL

Year	Uses	Source
1945	Guy T L Rev r	Southern California Telephone Company

715 E MILL

Year	Uses	Source
1991	Franks Bill Auto Body & Painting	GTE California Incorporated

735 E MILL

Year	Uses	Source
1945	Newman J C r	Southern California Telephone Company

FINDINGS

808 E MILL

Year	Uses	Source
1991	Aerospace Associates consltnts	GTE California Incorporated
	Mc Donnell Douglas Corporation	GTE California Incorporated
1975	Thiokol Corp	Pacific Telephone Co
	SPERRY UNIVAC DEFENSE SYSTEMS DIVISION	Pacific Telephone Co
	Boeing Co The	Pacific Telephone Co
	Autonetics Div Rockwell International	Pacific Telephone Co

823 E MILL

Year	Uses	Source
1975	Clark Chas H A	Pacific Telephone Co
	Chuck Clark Portable Welding	Pacific Telephone Co

851 E MILL

Year	Uses	Source
1975	Barrientes Geo A	Pacific Telephone Co

875 E MILL

Year	Uses	Source
1945	Bayless A L restrnt	Southern California Telephone Company
	Bs Mrs Cafe	Southern California Telephone Company

880 E MILL

Year	Uses	Source
1991	Inland Strapping Products	GTE California Incorporated
	inland Technical Institute	GTE California Incorporated
1975	N C O Service Center San Bernardino Chapter	Pacific Telephone Co
	N C O Service Center San Bernardino Chapter	Pacific Telephone Co
	GTE Sylvania Inc	Pacific Telephone Co
	BELL AEROSPACE DIV OF TEXTRON	Pacific Telephone Co
	Air Force Assn Charity Golf Tournament	Pacific Telephone Co
	Electronic Systems	Pacific Telephone Co

888 E MILL

Year	Uses	Source
1975	General Electric Co Aerospace Programs	Pacific Telephone Co

FINDINGS

E MILL ST

485 E MILL ST

Year	Uses	Source
1955	Elbow Room The beer parlor	Luskey Brothers& Co Publishers

499 E MILL ST

Year	Uses	Source
2013	COTT BEVERAGES	Cole Information Services
2008	XXXX	Haines Company, Inc.
1981	COCA COLA BOTTLING	General Telephone Company of California

519 E MILL ST

Year	Uses	Source
2013	DOWNTOWN AUTO WRECKING	Cole Information Services
2008	DOWNTOWN AUTO WRECKING	Haines Company, Inc.
1996	DOWNTOWN AUTO WRCKNG	GTE Street Address Directory

521 E MILL ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.
1981	BECKERS AUTO WRECKNG	General Telephone Company of California

527 E MILL ST

Year	Uses	Source
2013	MILLS AUTO & TRUCK RECYCLI	Cole Information Services
2008	JIMBOS AUTO WRECKING	Haines Company, Inc.
1996	JIMBOS AUTO WRECKING	GTE Street Address Directory
1981	JIMBOS AUTO WRECKING	General Telephone Company of California

530 E MILL ST

Year	Uses	Source
1955	Mc Farlane T L	Luskey Brothers& Co Publishers

535 E MILL ST

Year	Uses	Source
1955	Shady Haven Trailer Pk	Luskey Brothers& Co Publishers
	Wood E F	Luskey Brothers& Co Publishers

555 E MILL ST

Year	Uses	Source
1955	Vacant	Luskey Brothers& Co Publishers

FINDINGS

570 E MILL ST

Year	Uses	Source
2013	COTT BEVERAGES USA INC	Cole Information Services
2008	COTT BEVERAGES USA INC	Haines Company, Inc.

580 E MILL ST

Year	Uses	Source
2013	CONSOLIDATED ELECTRICAL DISTRIBUTORS	Cole Information Services
2008	XXXX	Haines Company, Inc.

585 E MILL ST

Year	Uses	Source
2008	NGUYEN Le	Haines Company, Inc.
	HUYNH Nghia	Haines Company, Inc.
1991	Wood Earl F	GTE California Incorporated
1981	WOOD EARL F	General Telephone Company of California

589 E MILL ST

Year	Uses	Source
1955	Field C M	Luskey Brothers& Co Publishers

595 E MILL ST

Year	Uses	Source
2013	MILL STREET BODY SHOP	Cole Information Services
	N & N AUTO REPAIR	Cole Information Services
2008	N & N AUTO REPAIR	Haines Company, Inc.
	MILL STREET BODY SHOP	Haines Company, Inc.
1996	B D & T AUTO REPAIR	GTE Street Address Directory
	A MILL STREET BODY SHOP	GTE Street Address Directory
	Building	GTE Street Address Directory
1991	Hi Tek Auto Repair	GTE California Incorporated
1981	a TONYS AUTO/TRK REPR	General Telephone Company of California
	MILL ST BODY S FRAME	General Telephone Company of California

606 E MILL ST

Year	Uses	Source
2013	YOUTHBUILD CHARTER SCHOOL OF CALIFOR	Cole Information Services
	YOUTHBUILD CHARTER SCHOOL OF CALIFOR	Cole Information Services
1996	Building	GTE Street Address Directory

FINDINGS

Year	Uses	Source
1996	MILL SRTEET PLAZA	GTE Street Address Directory
	ALLIED BLDG SYSTEMS	GTE Street Address Directory
1991	BUTLER MFG CO BUILDER	GTE California Incorporated
	Mill Street Plaza	GTE California Incorporated
1981	BONADIMAN JOS E	General Telephone Company of California
	CALIF STATE DPTS SYC	General Telephone Company of California
	u TRANS CALIF REALTY	General Telephone Company of California

629 E MILL ST

Year	Uses	Source
1955	Wood E F	Luskey Brothers& Co Publishers
	Inman W A	Luskey Brothers& Co Publishers

633 E MILL ST

Year	Uses	Source
2013	VIRTUAL IMAGES UNLIMITED	Cole Information Services
2008	XXXX	Haines Company, Inc.
1991	Becker John	GTE California Incorporated

637 E MILL ST

Year	Uses	Source
1955	Smith J A	Luskey Brothers& Co Publishers

657 E MILL ST

Year	Uses	Source
1955	BristerGeo	Luskey Brothers& Co Publishers
	Stover M I	Luskey Brothers& Co Publishers

677 E MILL ST

Year	Uses	Source
1955	Duncan Lois Mrs	Luskey Brothers& Co Publishers

686 E MILL ST

Year	Uses	Source
2013	AGING	Cole Information Services
	OMBUDSMAN PROGRAM	Cole Information Services
	COUNTY OF SAN BERNARDINO	Cole Information Services
	AGING	Cole Information Services
	OMBUDSMAN PROGRAM	Cole Information Services
	COUNTY OF SAN BERNARDINO	Cole Information Services

FINDINGS

Year	Uses	Source
2008	AREA AGENCY ON AGING	Haines Company, Inc.
	AREA AGENCY ON AGING	Haines Company, Inc.
	SANBDO CO AGING ADMN OMBUDSMAN	Haines Company, Inc.
	SANBDO CO AGING & ADULT SVS ADM	Haines Company, Inc.
	SANBDO CO CMTY SV FAMILY DEVLP	Haines Company, Inc.
	SANBDO CO CMTY SV FISCAL	Haines Company, Inc.
	SANBDO CO CMTY SV FOOD BANK	Haines Company, Inc.
	SANBDO CO CMTY SV FOOD STAMP	Haines Company, Inc.
	SANBDO CO CMTY SV NUTRITION SR	Haines Company, Inc.
	SANBDO CO CMTY SV NUTRITION SR	Haines Company, Inc.
	SANBDO CO CMTY SV PRSNL OPRTN	Haines Company, Inc.
	AGING & ADULT SV ADM	Haines Company, Inc.
	AGING SV TDD AGENCY	Haines Company, Inc.
	AGING ADULT SV PROTECTIVE TDD	Haines Company, Inc.
	BUILDING	Haines Company, Inc.
	OMBUDSMAN PROGRAM	Haines Company, Inc.

689 E MILL ST

Year	Uses	Source
1955	Yarbrough J F	Luskey Brothers& Co Publishers

715 E MILL ST

Year	Uses	Source
2013	H & R SMOG CHECK & AUTO REPR	Cole Information Services
2008	H & R SMOG CHECK & ATOMBL RPR	Haines Company, Inc.
1996	WEST COAST REBUILDERS	GTE Street Address Directory

727 E MILL ST

Year	Uses	Source
1955	Belleau E V Mrs	Luskey Brothers& Co Publishers

735 E MILL ST

Year	Uses	Source
1955	Newman J C	Luskey Brothers& Co Publishers

746 E MILL ST

Year	Uses	Source
1926	Dean Sarah Mrs	Los Angeles Directory Co Publisher

FINDINGS

749 E MILL ST

Year	Uses	Source
2008	ALCANTAR Elena	Haines Company, Inc.
1991	Barren Molly	GTE California Incorporated

751 E MILL ST

Year	Uses	Source
1955	Merrifield A T	Luskey Brothers& Co Publishers

761 E MILL ST

Year	Uses	Source
1955	Snyder EL	Luskey Brothers& Co Publishers

765 E MILL ST

Year	Uses	Source
1981	MUBALDO MARY A	General Telephone Company of California

777 E MILL ST

Year	Uses	Source
1955	Md Mullen V IV	Luskey Brothers& Co Publishers
	Kunze M B	Luskey Brothers& Co Publishers

783 E MILL ST

Year	Uses	Source
1955	Hightower S S	Luskey Brothers& Co Publishers

799 E MILL ST

Year	Uses	Source
1955	Campbell 0 K	Luskey Brothers& Co Publishers

808 E MILL ST

Year	Uses	Source
1991	Logicon Inc	GTE California Incorporated
	Draper Laboratory	GTE California Incorporated
	BOEING CO THE	GTE California Incorporated
1981	E WILSON JANEY	General Telephone Company of California
	MC DONHELL DOUGLAS	General Telephone Company of California
	INORTHROP CRP ELCTRNC	General Telephone Company of California
	NORTHROP CORP	General Telephone Company of California
	BOEING CO THE	General Telephone Company of California
	B HOPE AFA CHRTY GLF	General Telephone Company of California
	HERCULES AERSPCE OIV	General Telephone Company of California

FINDINGS

Year	Uses	Source
1981	LOGICON INC	General Telephone Company of California
	AEROSPACE ASSOCIATES	General Telephone Company of California
	THIOKOL CORP	General Telephone Company of California
	RCA CORP	General Telephone Company of California
	HONEYWELL CORP	General Telephone Company of California
	BUILDING	General Telephone Company of California
1970	Autonetics Div North American Rockwell Corp D	General Telephone Company of California
	Navigation & Control Div missile equip	General Telephone Company of California
	North American Rockwell Corp Autonetics Div	General Telephone Company of California

809 E MILL ST

Year	Uses	Source
1955	Dycus G L	Luskey Brothers& Co Publishers

817 E MILL ST

Year	Uses	Source
2008	REVAPASILLAS Reva	Haines Company, Inc.
	SESSIONS A	Haines Company, Inc.

823 E MILL ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.
1981	C CLARK PRTBLE WLDNG	General Telephone Company of California

825 E MILL ST

Year	Uses	Source
1955	Vacant	Luskey Brothers& Co Publishers

833 E MILL ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.

837 E MILL ST

Year	Uses	Source
2008	JIMENEZ Maria	Haines Company, Inc.
1955	Barrientes G A	Luskey Brothers& Co Publishers

849 E MILL ST

Year	Uses	Source
1955	Harpe C C	Luskey Brothers& Co Publishers

FINDINGS

859 E MILL ST

Year	Uses	Source
1955	Thomas C A	Luskey Brothers& Co Publishers

865 E MILL ST

Year	Uses	Source
1955	Thompson Jay	Luskey Brothers& Co Publishers
	Kin Raymond	Luskey Brothers& Co Publishers

874 E MILL ST

Year	Uses	Source
1970	General Electric Co Defense Programs Div	General Telephone Company of California

875 E MILL ST

Year	Uses	Source
2013	EXTRA SPACE STORAGE	Cole Information Services
	AAMERICAN SELF STORAGE	Cole Information Services
2008	MILL STREET STORAGE PARTNERS	Haines Company, Inc.
1955	Benedict D IR	Luskey Brothers& Co Publishers
	Benedicts Mkt gro	Luskey Brothers& Co Publishers

880 E MILL ST

Year	Uses	Source
2013	COUNTY OF SAN BERNARDINO	Cole Information Services
	COUNTY OF SAN BERNARDINO	Cole Information Services
1981	BUILDING	General Telephone Company of California
	MESTINGHOUSE ELECTRC	General Telephone Company of California
	GTE SYLVANIA INC	General Telephone Company of California
	GTE SYLVANIA INC	General Telephone Company of California
	GENL ELECTRC CO AERO	General Telephone Company of California
	BELL AEROSPCE TEXTRN	General Telephone Company of California
	A F A CHARITY GOLF	General Telephone Company of California

883 E MILL ST

Year	Uses	Source
1955	Apartments	Luskey Brothers& Co Publishers
	Spradlin Billy	Luskey Brothers& Co Publishers
	Barnes V H	Luskey Brothers& Co Publishers
	Buchanan K L	Luskey Brothers& Co Publishers
	Fletcher Jack	Luskey Brothers& Co Publishers

FINDINGS

885 E MILL ST

Year	Uses	Source
1955	Bayless A L	Luskey Brothers& Co Publishers
	Barton Ben	Luskey Brothers& Co Publishers

890 E MILL ST

Year	Uses	Source
2013	STAFFMARK	Cole Information Services
2008	STAFF MARK	Haines Company, Inc.

E SANTA FE ST

561 E SANTA FE ST

Year	Uses	Source
2008	HERRERA Saul	Haines Company, Inc.
	RODRIGUEZ Rosa	Haines Company, Inc.
	HERRERA Saul	Haines Company, Inc.

566 E SANTA FE ST

Year	Uses	Source
2008	SANCHEZ Andres	Haines Company, Inc.
1981	FLORES L R	General Telephone Company of California

572 E SANTA FE ST

Year	Uses	Source
2008	SIERRA Bertha	Haines Company, Inc.
1981	KING OLA MAE	General Telephone Company of California

575 E SANTA FE ST

Year	Uses	Source
2008	TURCIOS Juan	Haines Company, Inc.
	URIBES Gloria	Haines Company, Inc.

581 E SANTA FE ST

Year	Uses	Source
1981	GAVIN JAMIE	General Telephone Company of California
	MCODUFFY ROBT	General Telephone Company of California

582 E SANTA FE ST

Year	Uses	Source
2008	GUTIERREZ Jorge	Haines Company, Inc.

FINDINGS

608 E SANTA FE ST

Year	Uses	Source
1981	ROBINSON ROLLA	General Telephone Company of California

623 E SANTA FE ST

Year	Uses	Source
1981	SHELTON JACQUELINE	General Telephone Company of California

643 E SANTA FE ST

Year	Uses	Source
2008	MERCADO Miguel	Haines Company, Inc.
1996	Cluff Virginia	GTE Street Address Directory
1981	WILLIAMS BRIAN M	General Telephone Company of California

653 E SANTA FE ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.
1996	Eans Luella	GTE Street Address Directory

658 E SANTA FE ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.

660 E SANTA FE ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.

663 E SANTA FE ST

Year	Uses	Source
2008	MACIAS Jaime	Haines Company, Inc.

670 E SANTA FE ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.

672 E SANTA FE ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.

676 E SANTA FE ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.

FINDINGS

678 E SANTA FE ST

Year	Uses	Source
2008	PINEDA Jorge	Haines Company, Inc.
1991	Chaney Montaque	GTE California Incorporated

680 E SANTA FE ST

Year	Uses	Source
2008	EASHMON Mary	Haines Company, Inc.

686 E SANTA FE ST

Year	Uses	Source
1981	SHAW PAMELA	General Telephone Company of California

691 E SANTA FE ST

Year	Uses	Source
2008	MACIAS Javier	Haines Company, Inc.
	GOMEZ Hector	Haines Company, Inc.

692 E SANTA FE ST

Year	Uses	Source
2008	CHAN NOH Orlando	Haines Company, Inc.
1996	Morga Ana	GTE Street Address Directory

702 E SANTA FE ST

Year	Uses	Source
2008	ARIAS Gabriel	Haines Company, Inc.

703 E SANTA FE ST

Year	Uses	Source
2008	GEARY Craig	Haines Company, Inc.
	HILL TOPS MFG CO	Haines Company, Inc.
1996	HILL TOPS MFG CO	GTE Street Address Directory

708 E SANTA FE ST

Year	Uses	Source
2008	MORGA Alfredo	Haines Company, Inc.

721 E SANTA FE ST

Year	Uses	Source
2008	SALSBERRY Dana J	Haines Company, Inc.
	ARAIZA John	Haines Company, Inc.
1981	CABRERA ARTHUR J	General Telephone Company of California

FINDINGS

755 E SANTA FE ST

Year	Uses	Source
2008	MARTIN Phyllis	Haines Company, Inc.
1981	BYRD MARILYN	General Telephone Company of California

760 E SANTA FE ST

Year	Uses	Source
2008	GARCIA Maria	Haines Company, Inc.

772 E SANTA FE ST

Year	Uses	Source
2008	BERRONES Estella	Haines Company, Inc.

781 E SANTA FE ST

Year	Uses	Source
1981	HART JAS	General Telephone Company of California

792 E SANTA FE ST

Year	Uses	Source
2008	RODRIGUEZ Cruz	Haines Company, Inc.
1981	BURGESS NISEY	General Telephone Company of California

797 E SANTA FE ST

Year	Uses	Source
2008	CHAVEZ David	Haines Company, Inc.

814 E SANTA FE ST

Year	Uses	Source
2008	COLEMAN Trinon	Haines Company, Inc.

819 E SANTA FE ST

Year	Uses	Source
2008	KIRKLAND Ruffen	Haines Company, Inc.

820 E SANTA FE ST

Year	Uses	Source
2008	TREMBLAY Paul	Haines Company, Inc.

835 E SANTA FE ST

Year	Uses	Source
2008	SCHROEDER Herman	Haines Company, Inc.
1981	WARREN GEO W	General Telephone Company of California

FINDINGS

841 E SANTA FE ST

Year	Uses	Source
2008	TRAN Thang	Haines Company, Inc.
	FLORES Jennifer	Haines Company, Inc.

853 E SANTA FE ST

Year	Uses	Source
1981	EANS LUELLA	General Telephone Company of California

858 E SANTA FE ST

Year	Uses	Source
2008	WADLINGTON Stewart	Haines Company, Inc.

867 E SANTA FE ST

Year	Uses	Source
2013	ASHLAND INTEGRATED INC	Cole Information Services

874 E SANTA FE ST

Year	Uses	Source
2008	CASTRO Barbara	Haines Company, Inc.

879 E SANTA FE ST

Year	Uses	Source
2008	SERRANO Evaristo	Haines Company, Inc.

E TENNIS COURT LN

535 E TENNIS COURT LN

Year	Uses	Source
1991	Order Desk	GTE California Incorporated
	Metropolitan Automotive Warehouse	GTE California Incorporated

585 E TENNIS COURT LN

Year	Uses	Source
1991	General Seating Co	GTE California Incorporated

GIFFORD AVE

545 GIFFORD AVE

Year	Uses	Source
1955	Von Drott E F	Luskey Brothers& Co Publishers

FINDINGS

547 GIFFORD AVE

Year	Uses	Source
1955	Starkey Eunice Mrs	Luskey Brothers& Co Publishers

548 GIFFORD AVE

Year	Uses	Source
1955	Stockschlaeder A P	Luskey Brothers& Co Publishers

567 GIFFORD AVE

Year	Uses	Source
1955	Snyder Kurt	Luskey Brothers& Co Publishers

569 GIFFORD AVE

Year	Uses	Source
1955	Asedo R V	Luskey Brothers& Co Publishers

578 GIFFORD AVE

Year	Uses	Source
1955	Rayna Jose	Luskey Brothers& Co Publishers

581 GIFFORD AVE

Year	Uses	Source
1955	Vacant	Luskey Brothers& Co Publishers

621 GIFFORD AVE

Year	Uses	Source
1955	Stumpfhauser J J	Luskey Brothers& Co Publishers

GIFFORD AVE S

535 GIFFORD AVE S

Year	Uses	Source
2003	VAZQUEZ Enrique	Haines & Co Publishers

544 GIFFORD AVE S

Year	Uses	Source
2003	GRAUMANN Harvey	Haines & Co Publishers
1981	STOCKSCHLAEDER U V	General Telephone Company of California
1975	STOCKSCHLAEDER M V	General Telephone Company of California

561 GIFFORD AVE S

Year	Uses	Source
2003	JACKSON Roger	Haines & Co Publishers

565 GIFFORD AVE S

Year	Uses	Source
2003	DOTY David	Haines & Co Publishers

575 GIFFORD AVE S

Year	Uses	Source
2003	MEJIA Sebastian	Haines & Co Publishers

577 GIFFORD AVE S

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

588 GIFFORD AVE S

Year	Uses	Source
2003	XXXX	Haines & Co Publishers
1975	BROWN JULIA	General Telephone Company of California

623 GIFFORD AVE S

Year	Uses	Source
2003	TRUNGLE Tam	Haines & Co Publishers
	PADILLA Ramona	Haines & Co Publishers
1975	MILLER ELIZABETH	General Telephone Company of California

LENA DR S

280 LENA DR S

Year	Uses	Source
1981	BONADIMAN MCCAIN INC	General Telephone Company of California
	BONADIUAN LANDSCAPNG	General Telephone Company of California

LENA RD

203 LENA RD

Year	Uses	Source
1955	Trinity Full Gospel Ch	Luskey Brothers& Co Publishers

253 LENA RD

Year	Uses	Source
1955	Hernandez J A	Luskey Brothers& Co Publishers

265 LENA RD

Year	Uses	Source
1955	Vacant	Luskey Brothers& Co Publishers

275 LENA RD

Year	Uses	Source
1955	Oleskewicz S C	Luskey Brothers& Co Publishers

LENA RD S

175 LENA RD S

Year	Uses	Source
2003	SANBDO CO PUBLIC ADMINISTRATOR	Haines & Co Publishers
	SANBDO CO CORONER	Haines & Co Publishers

200 LENA RD S

Year	Uses	Source
2003	SANBDO CO SHRF PROP EVDNC OFCR	Haines & Co Publishers
	SANBDO CO SHRF FRNSC SCN LAB	Haines & Co Publishers
	FACILITIES MANAGMNT	Haines & Co Publishers
	SANBDO CO	Haines & Co Publishers
	SANBDO CO SHRF FINGERPRINTS	Haines & Co Publishers

210 LENA RD S

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

250 LENA RD S

Year	Uses	Source
2003	SANBDO CO PRESC SV HEAD START	Haines & Co Publishers

280 LENA RD S

Year	Uses	Source
2003	BONADIMAN MCCAIN INC	Haines & Co Publishers

FINDINGS

MILL ST

807 MILL ST

Year	Uses	Source
1936	Young 0 B	San Bernardino Directory Co Publisher

824 MILL ST

Year	Uses	Source
1949	Am Radiator	San Bernardino Directory Co. Publishers
	Sanitary Corp	San Bernardino Directory Co. Publishers

848 MILL ST

Year	Uses	Source
1949	Welchs Overall	San Bernardino Directory Co. Publishers
	Cing Co	San Bernardino Directory Co. Publishers

864 MILL ST

Year	Uses	Source
1949	Foster & Klelser Co	San Bernardino Directory Co. Publishers

932 MILL ST

Year	Uses	Source
1949	Coml Auto Repair	San Bernardino Directory Co. Publishers

940 MILL ST

Year	Uses	Source
1949	Sutlo Louis	San Bernardino Directory Co. Publishers
1942	Sutlo Louis	San Bernardino Directory Co Publisher
1936	Vacant	San Bernardino Directory Co Publisher
1930	Vacant	San Bernardino Directory Co Publisher

948 MILL ST

Year	Uses	Source
1949	Domengoni Tony	San Bernardino Directory Co. Publishers
1942	Domengoni Tony	San Bernardino Directory Co Publisher
1936	Sotalo Louis	San Bernardino Directory Co Publisher
1930	Miller Margt Mrs	San Bernardino Directory Co Publisher

950 MILL ST

Year	Uses	Source
1949	Stelnhoff E A	San Bernardino Directory Co. Publishers
1942	Domengoni Chas	San Bernardino Directory Co Publisher

Year	Uses	Source
1936	Domengoni Anto	San Bernardino Directory Co Publisher
1930	Domengoni Antonio	San Bernardino Directory Co Publisher

MILL ST E

499 MILL ST E

Year	Uses	Source
2003	COTT BEVERAGES USA INC	Haines & Co Publishers
1975	COCA COLA BOTTLING	General Telephone Company of California

519 MILL ST E

Year	Uses	Source
2003	DOWNTOWN AUTO WRECKING	Haines & Co Publishers

521 MILL ST E

Year	Uses	Source
2003	BECKER Leonard	Haines & Co Publishers
1975	BECKERS AUTO WRECKNG	General Telephone Company of California

527 MILL ST E

Year	Uses	Source
2003	JIMBOS AUTO WRECKING	Haines & Co Publishers
1975	MILL ST AUTO WRECKNG	General Telephone Company of California

580 MILL ST E

Year	Uses	Source
2003	GRISHAM Eric	Haines & Co Publishers
	EMPIRE TILE & MARBLE SUPPLY	Haines & Co Publishers

585 MILL ST E

Year	Uses	Source
2003	NGUYEN Buu Van	Haines & Co Publishers
	HUYNH Nghia	Haines & Co Publishers
1975	WOOD EARL F	General Telephone Company of California

595 MILL ST E

Year	Uses	Source
2003	MILL STREET BODY SHOP	Haines & Co Publishers
	NUYNH Ben	Haines & Co Publishers
	D & T AUTO REPAIR	Haines & Co Publishers

FINDINGS

600 MILL ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

606 MILL ST E

Year	Uses	Source
2003	BATTAGLIA Richard	Haines & Co Publishers

608 MILL ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

633 MILL ST E

Year	Uses	Source
2003	BECKER Leonard	Haines & Co Publishers
1975	BAKER MARY	General Telephone Company of California

686 MILL ST E

Year	Uses	Source
2003	BUILDING	Haines & Co Publishers
	AGING AREA AGENCY ON AGING TDD	Haines & Co Publishers
	AGING SENIOR EMPLOYMENT PRGRM	Haines & Co Publishers
	AGING & ADULT SVS DEPT OF ADMIN	Haines & Co Publishers
	AREA AGENCY ON AGING	Haines & Co Publishers
	BATTAGLIA Richard	Haines & Co Publishers
	OMBUDSMAN PROGRAM	Haines & Co Publishers
	SANBDO CO AGING ADMIN	Haines & Co Publishers
	SANBDO CO CMNTY SV ADMIN	Haines & Co Publishers
	SANBDO CO CMNTY SV FD STMP EMP	Haines & Co Publishers
	SANBDO CO CMNTY SV FISCAL	Haines & Co Publishers
	SANBDO CO CMNTY SV FMLY DEVLP	Haines & Co Publishers
	SANBDO CO CMNTY SV FOOD BANK	Haines & Co Publishers
	SANBDO CO CMNTY SV NTRTN SRS	Haines & Co Publishers
	SANBDO CO CMNTY SV PRSNL OPERS	Haines & Co Publishers
	SANBDO CO CMNTY SV WTHRZTN SRV	Haines & Co Publishers
	SANBDO CO SOCL SV CHLD	Haines & Co Publishers
	SENIOR EMPLOYMENT PROGRAM	Haines & Co Publishers
	SENIOR HOME CARE CENTERPROGRM	Haines & Co Publishers
1975	LL UNV CTR DPT BEHAV	General Telephone Company of California

FINDINGS

696 MILL ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

715 MILL ST E

Year	Uses	Source
2003	H & R SMOG CHECK	Haines & Co Publishers
	FRANKS William	Haines & Co Publishers

740 MILL ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

749 MILL ST E

Year	Uses	Source
2003	CERVANTES Evelyn	Haines & Co Publishers

757 MILL ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

765 MILL ST E

Year	Uses	Source
1975	WUBALDO MARY A	General Telephone Company of California

800 MILL ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

806 MILL ST E

Year	Uses	Source
1965	PHILCO CORPORATION	General Telephone Company of California

808 MILL ST E

Year	Uses	Source
1975	BUILDING	General Telephone Company of California
	BOEING COMPANY THE	General Telephone Company of California
	NORTHROP CORP	General Telephone Company of California
	SPERRY UNIVAC	General Telephone Company of California
	THIOKOL CORP	General Telephone Company of California
	ROCKWELL INTRNATL	General Telephone Company of California
	LOGICON INC	General Telephone Company of California

FINDINGS

Year	Uses	Source
1975	NORTHROP CRP ELCTRNC	General Telephone Company of California
	MC DONNELL DOUGLAS	General Telephone Company of California
1965	BUILDING	General Telephone Company of California
	BENDIX CORP	General Telephone Company of California
	GEN PRECISION AEROSP	General Telephone Company of California
	DOUGLAS AIRCRAFT CO	General Telephone Company of California
	LOCKHEED MISSL/SPACE	General Telephone Company of California
	PARSONS RALPH M CO	General Telephone Company of California
	NORTHROP NORTRONICS	General Telephone Company of California
	UNIVAC	General Telephone Company of California
	PITRUZZELLOS	General Telephone Company of California
	ITT US DEFNC SPC GRP	General Telephone Company of California

817 MILL ST E

Year	Uses	Source
2003	SESSIONS A	Haines & Co Publishers
	MCNEIL T	Haines & Co Publishers

823 MILL ST E

Year	Uses	Source
2003	GROTENHUIS Marinus	Haines & Co Publishers
1975	C CLARK PRTBLE WLONG	General Telephone Company of California

826 MILL ST E

Year	Uses	Source
1965	GOODYEAR	General Telephone Company of California

837 MILL ST E

Year	Uses	Source
2003	JIMENEZ Maria	Haines & Co Publishers

851 MILL ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers
1975	BARRIENTES GEO A	General Telephone Company of California

874 MILL ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers
1965	GENRL ELECTRC CO DPO	General Telephone Company of California

FINDINGS

875 MILL ST E

Year	Uses	Source
2003	AAA MAXI MINI SELF STORAGE	Haines & Co Publishers

880 MILL ST E

Year	Uses	Source
1975	N C O A SERVICE CNTR	General Telephone Company of California
	N C O A SERVICE CNTR	General Telephone Company of California
	UNITED TECHNOLOGIES	General Telephone Company of California
	GTE SYLVANIA INC	General Telephone Company of California
	BELL AEROSPACE	General Telephone Company of California
	BUILDING	General Telephone Company of California
	FEDERAL EMPLS ASSN	General Telephone Company of California
	AVCO CORPORATION	General Telephone Company of California
	AIR FORCE ASSN CHRTY	General Telephone Company of California

888 MILL ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers
1975	GENL ELEC CO AERO	General Telephone Company of California
1965	THIOKOL CHEML CORP	General Telephone Company of California
	RAYTHEON CO	General Telephone Company of California
	MC DONNELL AIRCRAFT	General Telephone Company of California
	MARTIN CO	General Telephone Company of California
	HERCULES POWDER CO	General Telephone Company of California

S 2ND

243 S 2ND

Year	Uses	Source
1926	Martinez Marguerito Juana lab h	Los Angeles Directory Company

319 S 2ND

Year	Uses	Source
1926	Gutierrez Francisco lab h	Los Angeles Directory Company

S 2ND AVE

185 S 2ND AVE

Year	Uses	Source
1990	Phillips Orvet C	GTE

FINDINGS

216 S 2ND AVE

Year	Uses	Source
2013	ASTRO FAB INC SHEET METL WK	Cole Information Services
	GLOBAL SURPLUS SOLUTIONS	Cole Information Services
2008	ASTRO FAB INC	Haines Company, Inc.
	CANNON SAFE	Haines Company, Inc.

294 S 2ND AVE

Year	Uses	Source
2013	FAITH INDUSTRIES	Cole Information Services
2008	WESTERN WOOD SUPPLY	Haines Company, Inc.
	CREATIVE DESIGNS INTERNATIONAL	Haines Company, Inc.

384 S 2ND AVE

Year	Uses	Source
2013	CALIFORNIA REDWOOD	Cole Information Services
2008	CALIFORNIA REDWOOD	Haines Company, Inc.

S 3 CHURCH ICAGO DR RUNNING SPR

235 S 3 CHURCH ICAGO DR RUNNING SPR

Year	Uses	Source
1970	Bill Reuben	General Telephone Company of California

S 3 HILLVIEW HIGIAND

268 S 3 HILLVIEW HIGIAND

Year	Uses	Source
1970	Morales Ana H	General Telephone Company of California

S 3RD

201 S 3RD

Year	Uses	Source
1975	Hernandez Dolores	Pacific Telephone Co

220 S 3RD

Year	Uses	Source
1926	ronzales Hilario Sylvia h	Los Angeles Directory Company

FINDINGS

227 S 3RD

Year	Uses	Source
1926	Garcia Alex Rosa lab h	Los Angeles Directory Company

236 S 3RD

Year	Uses	Source
1926	Fletcher John D Vanna rancher h	Los Angeles Directory Company

243 S 3RD

Year	Uses	Source
1926	Frias Rita Mrs h	Los Angeles Directory Company

269 S 3RD

Year	Uses	Source
1926	Tapia Jose Macaria h	Los Angeles Directory Company

284 S 3RD

Year	Uses	Source
1926	Torres Jos Juanita h	Los Angeles Directory Company

285 S 3RD

Year	Uses	Source
1991	Vasquez Fred M	GTE California Incorporated
1975	Vasquez Fred M	Pacific Telephone Co

289 S 3RD

Year	Uses	Source
1975	Rodriquez Henrietta	Pacific Telephone Co
	Rodriquez Modesto	Pacific Telephone Co

293 S 3RD

Year	Uses	Source
1926	Moses Arth L Anna h	Los Angeles Directory Company

295 S 3RD

Year	Uses	Source
1975	Guerra Ramona T	Pacific Telephone Co

303 S 3RD

Year	Uses	Source
1926	Reeder Jas P Mary E h	Los Angeles Directory Company
	Reeder Le Roy r	Los Angeles Directory Company

FINDINGS

304 S 3RD

Year	Uses	Source
1926	Nicholas Chas Marie h	Los Angeles Directory Company

318 S 3RD

Year	Uses	Source
1926	Hendricks Walter lab r	Los Angeles Directory Company
	Hendricks Waldo lab r	Los Angeles Directory Company
	Hendricks Dora wid E L h	Los Angeles Directory Company
	Hendricks Warren pipeftr r	Los Angeles Directory Company

354 S 3RD

Year	Uses	Source
1926	hone Clinton W Justine rancher h	Los Angeles Directory Company

378 S 3RD

Year	Uses	Source
1926	Ortiz Jos U Eva blksmith h	Los Angeles Directory Company

S 3RD AVE

263 S 3RD AVE

Year	Uses	Source
1990	Johs M I	GTE

271 S 3RD AVE

Year	Uses	Source
1990	Hernandez Jose	GTE
	Hernandez Jose A	GTE

296 S 3RD AVE

Year	Uses	Source
1990	Thacker Fred & Fayetta	GTE
	Thacker John	GTE

303 S 3RD AVE

Year	Uses	Source
1990	Zorad V	GTE
	Zorad T A Clar	GTE

FINDINGS

328 S 3RD AVE

Year	Uses	Source
1990	Reece Kristy Pmra	GTE
	Reece L	GTE

339 S 3RD AVE

Year	Uses	Source
1990	Kennedy H Ruth	GTE

353 S 3RD AVE

Year	Uses	Source
1990	Faraldo Ruth	GTE

S 5 NGENEVIEVE

339 S 5 NGENEVIEVE

Year	Uses	Source
1975	Sears V A	Pacific Telephone Co

S 5 NSTODDARD AVE

495 S 5 NSTODDARD AVE

Year	Uses	Source
1975	Wing Dani L	Pacific Telephone Co

S 5 VILLA HIGHLAND

269 S 5 VILLA HIGHLAND

Year	Uses	Source
1970	Soto Ruth	General Telephone Company of California

S 5 VIRGINIA AVE

206 S 5 VIRGINIA AVE

Year	Uses	Source
1975	Rascon Bruce	GTE Directories

S 5TH

290 S 5TH

Year	Uses	Source
1975	Martinez John L	Pacific Telephone Co

Year	Uses	Source
1975	Rios Paula	Pacific Telephone Co

405 S 5TH

Year	Uses	Source
1975	Gonzales Tony	Pacific Telephone Co

427 S 5TH

Year	Uses	Source
1975	Lujan Jose R	Pacific Telephone Co

445 S 5TH

Year	Uses	Source
1975	Garcia Maria	Pacific Telephone Co
	Garcia Carlos M	Pacific Telephone Co

461 S 5TH

Year	Uses	Source
1975	Barrera Maria	Pacific Telephone Co

S DOOLITTLE AVE

363 S DOOLITTLE AVE

Year	Uses	Source
2013	THE SALVATION ARMY	Cole Information Services
2008	SALVATN ARMY ADULT REHAB CNTR	Haines Company, Inc.

S GIFFORD AVE

535 S GIFFORD AVE

Year	Uses	Source
2008	RODRIGUEZ Enrique	Haines Company, Inc.

544 S GIFFORD AVE

Year	Uses	Source
2008	TRUJILLO Hector	Haines Company, Inc.
1991	Stockschlaeder M V	GTE California Incorporated

561 S GIFFORD AVE

Year	Uses	Source
2008	JACKSON Roger	Haines Company, Inc.

FINDINGS

565 S GIFFORD AVE

Year	Uses	Source
2008	TRUJILLO Hector	Haines Company, Inc.

575 S GIFFORD AVE

Year	Uses	Source
2008	BRISCOE Peter	Haines Company, Inc.
	ROMAN Monica	Haines Company, Inc.

577 S GIFFORD AVE

Year	Uses	Source
2008	SANTOLLA Nicole	Haines Company, Inc.

623 S GIFFORD AVE

Year	Uses	Source
2008	LE Tam T	Haines Company, Inc.

S LENA RD

150 S LENA RD

Year	Uses	Source
2013	COUNTY OF SAN BERNARDINO	Cole Information Services
	COUNTY OF SAN BERNARDINO	Cole Information Services

175 S LENA RD

Year	Uses	Source
2013	COUNTY OF SAN BERNARDINO	Cole Information Services
	COUNTY OF SAN BERNARDINO	Cole Information Services
	COUNTY OF SAN BERNARDINO	Cole Information Services
2008	SANBDO CO CORONER	Haines Company, Inc.
	SANBDO CO DFNDR PUBLIC GUARDN	Haines Company, Inc.

200 S LENA RD

Year	Uses	Source
2013	COUNTY OF SAN BERNARDINO	Cole Information Services
	COUNTY OF SAN BERNARDINO	Cole Information Services
2008	SANBDO CO SHRFF FRNSC SCN LAB	Haines Company, Inc.
	SANBDO CO FACILITIES MANAGMNT	Haines Company, Inc.
	SANBDO CO SHRFF PROP EVDNC	Haines Company, Inc.
	SANBDO CO SHRFF FINGERPRINTS	Haines Company, Inc.

FINDINGS

210 S LENA RD

Year	Uses	Source
2013	COUNTY OF SAN BERNARDINO	Cole Information Services
	COUNTY OF SAN BERNARDINO	Cole Information Services

250 S LENA RD

Year	Uses	Source
2013	PRESCHOOL SERVICES DEPARTMENT HEAD S	Cole Information Services
	COUNTY OF SAN BERNARDINO	Cole Information Services
	PRESCHOOL SERVICES DEPARTMENT HEAD S	Cole Information Services
	COUNTY OF SAN BERNARDINO	Cole Information Services
2008	PRESCHOOL SV DPRTMNT HD STRT	Haines Company, Inc.
1996	TRANS CALIF REALTY	GTE Street Address Directory
	JOSEPH E BONADIMAN	GTE Street Address Directory
1991	BONADIMAN JOSEPH E & ASSOCIATES INC	GTE California Incorporated
	Trans California Realty Corp	GTE California Incorporated

280 S LENA RD

Year	Uses	Source
2013	BONADIMANMCCAIN INC	Cole Information Services
2008	DB CONSTRUCTION	Haines Company, Inc.
	BONADIMAN MC INC	Haines Company, Inc.
1996	BONADIMAN MCCAIN INC	GTE Street Address Directory
1991	Bonadiman Mc Cain Inc	GTE California Incorporated

S VALLEY VIEW AVE

542 S VALLEY VIEW AVE

Year	Uses	Source
2008	XXXX	Haines Company, Inc.

558 S VALLEY VIEW AVE

Year	Uses	Source
2008	ALLEN Peter	Haines Company, Inc.
	VALDEZ Maria	Haines Company, Inc.
	CERVANTES Armando	Haines Company, Inc.
1996	Morga Maria Santos	GTE Street Address Directory

FINDINGS

567 S VALLEY VIEW AVE

Year	Uses	Source
2008	XXXX	Haines Company, Inc.
1975	Big Johns Meats	Pacific Telephone Co
	Glenns G & H Meat Co	Pacific Telephone Co

625 S VALLEY VIEW AVE

Year	Uses	Source
2008	TAMAYO Justo	Haines Company, Inc.

924 S VALLEY VIEW AVE

Year	Uses	Source
1996	Gasca Andy J	GTE Street Address Directory

SAN JACINTO

759 SAN JACINTO

Year	Uses	Source
1945	Noble E R r	Southern California Telephone Company

815 SAN JACINTO

Year	Uses	Source
1945	Silvera Poultry Ranch	Southern California Telephone Company

869 SAN JACINTO

Year	Uses	Source
1945	Gray D A Mrs r	Southern California Telephone Company

SAN JACINTO ST

502 SAN JACINTO ST

Year	Uses	Source
1955	Walsh R W	Luskey Brothers& Co Publishers
	Goodner J G	Luskey Brothers& Co Publishers

510 SAN JACINTO ST

Year	Uses	Source
1955	Becker C M	Luskey Brothers& Co Publishers

517 SAN JACINTO ST

Year	Uses	Source
2008	CURRAN Wm H	Haines Company, Inc.

FINDINGS

Year	Uses	Source
2008	ADIBI Philippe	Haines Company, Inc.
2003	CURRAN Wm H	Haines & Co Publishers

518 SAN JACINTO ST

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

519 SAN JACINTO ST

Year	Uses	Source
1955	Robbins G :L	Luskey Brothers& Co Publishers

521 SAN JACINTO ST

Year	Uses	Source
1955	Seymour L K Mrs	Luskey Brothers& Co Publishers

523 SAN JACINTO ST

Year	Uses	Source
2008	ROBBINS Gary Chuck	Haines Company, Inc.
2003	ROBBINS Gary Chuck	Haines & Co Publishers
1955	Miller H P	Luskey Brothers& Co Publishers
	Curran Elijah	Luskey Brothers& Co Publishers
	Currans Rubish Hauling	Luskey Brothers& Co Publishers

526 SAN JACINTO ST

Year	Uses	Source
1955	Lerma Francisco	Luskey Brothers& Co Publishers

527 SAN JACINTO ST

Year	Uses	Source
1955	Flick C C	Luskey Brothers& Co Publishers

532 SAN JACINTO ST

Year	Uses	Source
1955	Gutierrez R F	Luskey Brothers& Co Publishers

534 SAN JACINTO ST

Year	Uses	Source
1955	Mc Gray J R	Luskey Brothers& Co Publishers

FINDINGS

544 SAN JACINTO ST

Year	Uses	Source
1955	Sheldon E M	Luskey Brothers& Co Publishers

545 SAN JACINTO ST

Year	Uses	Source
1955	Kurtz John	Luskey Brothers& Co Publishers

549 SAN JACINTO ST

Year	Uses	Source
2008	CURRAN B J	Haines Company, Inc.
2003	CURRAN B J	Haines & Co Publishers

562 SAN JACINTO ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.
2003	WHITE Melody	Haines & Co Publishers

563 SAN JACINTO ST

Year	Uses	Source
2008	LANDIN Dea	Haines Company, Inc.
2003	SANTOS Irene	Haines & Co Publishers

567 SAN JACINTO ST

Year	Uses	Source
2008	CURRAN Barbara	Haines Company, Inc.
2003	CURRAN Barbara	Haines & Co Publishers
1955	Sanzone E A	Luskey Brothers& Co Publishers

568 SAN JACINTO ST

Year	Uses	Source
2008	FRAGOSO Aniceto	Haines Company, Inc.
	JESUS Avalos	Haines Company, Inc.
2003	BECKER Leonard	Haines & Co Publishers

570 SAN JACINTO ST

Year	Uses	Source
1955	Shafer H A	Luskey Brothers& Co Publishers

575 SAN JACINTO ST

Year	Uses	Source
2008	HINMAN Julia	Haines Company, Inc.

FINDINGS

Year	Uses	Source
2003	HINMAN Julia	Haines & Co Publishers

576 SAN JACINTO ST

Year	Uses	Source
2003	HUYNH Ben	Haines & Co Publishers

582 SAN JACINTO ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.
2003	XXXX	Haines & Co Publishers

584 SAN JACINTO ST

Year	Uses	Source
2008	WALTON Joereath	Haines Company, Inc.

590 SAN JACINTO ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.
2003	VIETH Ralph	Haines & Co Publishers

593 SAN JACINTO ST

Year	Uses	Source
2013	KEN S CONSTRUCTION	Cole Information Services
2008	KENS CONSTRUCTION SERVICE	Haines Company, Inc.
	FRY Kanneth	Haines Company, Inc.
2003	FRY Kenneth	Haines & Co Publishers
	KENS CONSTRUCTION SERVICE	Haines & Co Publishers
	ALLEN Wayne	Haines & Co Publishers

603 SAN JACINTO ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.
2003	SALIBA Jerjes	Haines & Co Publishers

633 SAN JACINTO ST

Year	Uses	Source
1955	Schnitzler W F	Luskey Brothers& Co Publishers

641 SAN JACINTO ST

Year	Uses	Source
1955	Collins E J	Luskey Brothers& Co Publishers

FINDINGS

642 SAN JACINTO ST

Year	Uses	Source
1955	Murphy L D	Luskey Brothers& Co Publishers

643 SAN JACINTO ST

Year	Uses	Source
1955	Leinen J A	Luskey Brothers& Co Publishers

645 SAN JACINTO ST

Year	Uses	Source
1955	Leinen Joan E	Luskey Brothers& Co Publishers

659 SAN JACINTO ST

Year	Uses	Source
2003	HUYNH Viet	Haines & Co Publishers

665 SAN JACINTO ST

Year	Uses	Source
1955	Collins B J R	Luskey Brothers& Co Publishers

669 SAN JACINTO ST

Year	Uses	Source
1955	Privett H H	Luskey Brothers& Co Publishers

671 SAN JACINTO ST

Year	Uses	Source
2003	VARGAS Jesus	Haines & Co Publishers

672 SAN JACINTO ST

Year	Uses	Source
2003	MURPHY Loren	Haines & Co Publishers

675 SAN JACINTO ST

Year	Uses	Source
2008	BENITEZ DELG Armando	Haines Company, Inc.

677 SAN JACINTO ST

Year	Uses	Source
2008	DELEON Socorro	Haines Company, Inc.
2003	XXXX	Haines & Co Publishers

FINDINGS

680 SAN JACINTO ST

Year	Uses	Source
1955	Cosner D IL Mrs	Luskey Brothers& Co Publishers

689 SAN JACINTO ST

Year	Uses	Source
1955	rear Reld H M	Luskey Brothers& Co Publishers
	Borbon Magdalene Mrs	Luskey Brothers& Co Publishers
	Warren R A Mrs	Luskey Brothers& Co Publishers

691 SAN JACINTO ST

Year	Uses	Source
2008	VARGAS Sabastian	Haines Company, Inc.
2003	VARGAS Sebastian	Haines & Co Publishers

702 SAN JACINTO ST

Year	Uses	Source
2008	TOVAR Ruth	Haines Company, Inc.
2003	TOVAH Ruth	Haines & Co Publishers

711 SAN JACINTO ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.
2003	HWANG Han	Haines & Co Publishers
1955	Lawson Paul	Luskey Brothers& Co Publishers

715 SAN JACINTO ST

Year	Uses	Source
1955	Weckerle Frances Mrs	Luskey Brothers& Co Publishers

719 SAN JACINTO ST

Year	Uses	Source
1955	Syphers N J	Luskey Brothers& Co Publishers

721 SAN JACINTO ST

Year	Uses	Source
2008	GONZALES Juan	Haines Company, Inc.
	JOHNSON Alonzo	Haines Company, Inc.
2003	VARGAS Janette	Haines & Co Publishers

FINDINGS

730 SAN JACINTO ST

Year	Uses	Source
1955	Vacant	Luskey Brothers& Co Publishers

745 SAN JACINTO ST

Year	Uses	Source
2008	JONES Kristin	Haines Company, Inc.
2003	TRUITT Richard	Haines & Co Publishers

747 SAN JACINTO ST

Year	Uses	Source
1955	Holcomb E E	Luskey Brothers& Co Publishers

758 SAN JACINTO ST

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

759 SAN JACINTO ST

Year	Uses	Source
1955	Serrano M I	Luskey Brothers& Co Publishers

768 SAN JACINTO ST

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

771 SAN JACINTO ST

Year	Uses	Source
2008	HOLCOMB Elton	Haines Company, Inc.
2003	HOLCOMB Char	Haines & Co Publishers
	HOLCOMB Elton E	Haines & Co Publishers

774 SAN JACINTO ST

Year	Uses	Source
1955	Jones B T	Luskey Brothers& Co Publishers

785 SAN JACINTO ST

Year	Uses	Source
1955	1 Palmer W	Luskey Brothers& Co Publishers

792 SAN JACINTO ST

Year	Uses	Source
1955	Jones R L Mrs	Luskey Brothers& Co Publishers

FINDINGS

795 SAN JACINTO ST

Year	Uses	Source
1955	Dillon W H	Luskey Brothers& Co Publishers

801 SAN JACINTO ST

Year	Uses	Source
2008	CERVANTEZ John	Haines Company, Inc.
2003	CERVANTEZ John	Haines & Co Publishers

804 SAN JACINTO ST

Year	Uses	Source
1955	Wagner I S Mrs	Luskey Brothers& Co Publishers

805 SAN JACINTO ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.

807 SAN JACINTO ST

Year	Uses	Source
1955	Mantz C C	Luskey Brothers& Co Publishers

808 SAN JACINTO ST

Year	Uses	Source
1955	Tucker Rodney	Luskey Brothers& Co Publishers

810 SAN JACINTO ST

Year	Uses	Source
2008	GAYTAN Edward	Haines Company, Inc.
2003	GAYTAN Edward	Haines & Co Publishers

811 SAN JACINTO ST

Year	Uses	Source
2008	VEGARA Ramiro	Haines Company, Inc.

814 SAN JACINTO ST

Year	Uses	Source
1955	Pirkcle J B Mrs	Luskey Brothers& Co Publishers

815 SAN JACINTO ST

Year	Uses	Source
1955	Lopez F D	Luskey Brothers& Co Publishers

FINDINGS

818 SAN JACINTO ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.
2003	XXXX	Haines & Co Publishers

820 SAN JACINTO ST

Year	Uses	Source
1955	Littlepage M E	Luskey Brothers& Co Publishers

822 SAN JACINTO ST

Year	Uses	Source
2008	MORALES Emiterio	Haines Company, Inc.
2003	MORALES Emiterio	Haines & Co Publishers

824 SAN JACINTO ST

Year	Uses	Source
1955	Peace G F	Luskey Brothers& Co Publishers

832 SAN JACINTO ST

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

833 SAN JACINTO ST

Year	Uses	Source
2008	WRIGHT Valerie	Haines Company, Inc.
2003	WRIGHT James	Haines & Co Publishers

838 SAN JACINTO ST

Year	Uses	Source
2008	RAMIREZ Everth	Haines Company, Inc.
2003	MERLOS Magalli	Haines & Co Publishers
	RAMIREZ Everth	Haines & Co Publishers

841 SAN JACINTO ST

Year	Uses	Source
2008	BRAGA Rachel	Haines Company, Inc.
2003	BRAGA Rachel	Haines & Co Publishers

842 SAN JACINTO ST

Year	Uses	Source
1955	Boatright Ola Mrs	Luskey Brothers& Co Publishers

FINDINGS

844 SAN JACINTO ST

Year	Uses	Source
1955	Smith H F	Luskey Brothers& Co Publishers

845 SAN JACINTO ST

Year	Uses	Source
1955	Green F E	Luskey Brothers& Co Publishers

847 SAN JACINTO ST

Year	Uses	Source
1955	Vacant	Luskey Brothers& Co Publishers

848 SAN JACINTO ST

Year	Uses	Source
2008	FLORES Encamacion	Haines Company, Inc.
2003	FLORES Encarnacion	Haines & Co Publishers

849 SAN JACINTO ST

Year	Uses	Source
1955	Shannon D E	Luskey Brothers& Co Publishers

860 SAN JACINTO ST

Year	Uses	Source
2008	VANDERPLOEG Maxine	Haines Company, Inc.
2003	VANDERPLOEG Maxine	Haines & Co Publishers

862 SAN JACINTO ST

Year	Uses	Source
1955	Napier C L	Luskey Brothers& Co Publishers

863 SAN JACINTO ST

Year	Uses	Source
2008	MARTINEZ Maria	Haines Company, Inc.
2003	HOOPER Oral	Haines & Co Publishers

864 SAN JACINTO ST

Year	Uses	Source
1955	Smith H F	Luskey Brothers& Co Publishers

868 SAN JACINTO ST

Year	Uses	Source
2008	SO Elizabeth	Haines Company, Inc.

FINDINGS

Year	Uses	Source
2008	LEE Ting	Haines Company, Inc.
2003	LEE Ting	Haines & Co Publishers
	SO Elizabeth	Haines & Co Publishers

869 SAN JACINTO ST

Year	Uses	Source
2008	SPEAR Ruth	Haines Company, Inc.
	PARKS Rick	Haines Company, Inc.
2003	SPEAR Ruth	Haines & Co Publishers
1955	Warren Reba Mrs	Luskey Brothers& Co Publishers

871 SAN JACINTO ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.

872 SAN JACINTO ST

Year	Uses	Source
1955	Dial J F	Luskey Brothers& Co Publishers

877 SAN JACINTO ST

Year	Uses	Source
1955	52	Luskey Brothers& Co Publishers
	Palmer W S	Luskey Brothers& Co Publishers
	Mc Combe Alex	Luskey Brothers& Co Publishers

879 SAN JACINTO ST

Year	Uses	Source
2008	XXXX	Haines Company, Inc.
2003	HITT John	Haines & Co Publishers

885 SAN JACINTO ST

Year	Uses	Source
2008	CAMACHO Rigoberto	Haines Company, Inc.
2003	PHUMIRAT Kitikul	Haines & Co Publishers

893 SAN JACINTO ST

Year	Uses	Source
2008	ROBLES Augustine	Haines Company, Inc.
2003	ROBLES Augustine	Haines & Co Publishers

903 SAN JACINTO ST

Year	Uses	Source
2008	ACEVEDO Pedro	Haines Company, Inc.
2003	MACIAS Manuel	Haines & Co Publishers

SAN JACINTO ST E

517 SAN JACINTO ST E

Year	Uses	Source
1996	Curran Wm H	GTE Street Address Directory
1981	CURRAN WN H	General Telephone Company of California
1975	CURRAN WM H	General Telephone Company of California

523 SAN JACINTO ST E

Year	Uses	Source
1996	Robblns Gary Chuck	GTE Street Address Directory
1981	ROBBINS GARY CHUCK	General Telephone Company of California
1975	ROBBINS GARY CHUCK	General Telephone Company of California

549 SAN JACINTO ST E

Year	Uses	Source
1996	Curran BJ J	GTE Street Address Directory
1981	CURRANS RUBBSH DSPSL	General Telephone Company of California
	CURRAN E	General Telephone Company of California
1975	CURRANS RUBBSH DSPSL	General Telephone Company of California

562 SAN JACINTO ST E

Year	Uses	Source
1981	ROBERTS JOHN W	General Telephone Company of California
1975	ROBERTS JOHN W	General Telephone Company of California

567 SAN JACINTO ST E

Year	Uses	Source
1975	KING ROY L	General Telephone Company of California

590 SAN JACINTO ST E

Year	Uses	Source
1981	NEWBY J A	General Telephone Company of California

593 SAN JACINTO ST E

Year	Uses	Source
1996	KEN S CONSTRUCTION	GTE Street Address Directory

FINDINGS

Year	Uses	Source
1981	CHURCH/THE LIVNG GOD	General Telephone Company of California
1975	CHURCH/THE LIVNG GOD	General Telephone Company of California

659 SAN JACINTO ST E

Year	Uses	Source
1981	SCHNITZLER W F	General Telephone Company of California
1975	SCHNITZLER W F	General Telephone Company of California

677 SAN JACINTO ST E

Year	Uses	Source
1981	JORDEN JR OLIN	General Telephone Company of California
1975	OSBORN MONA	General Telephone Company of California

702 SAN JACINTO ST E

Year	Uses	Source
1981	ALLEN ISAAC	General Telephone Company of California

711 SAN JACINTO ST E

Year	Uses	Source
1975	BARNES JUNE E	General Telephone Company of California

721 SAN JACINTO ST E

Year	Uses	Source
1975	RODRIGUEZ FRANCES	General Telephone Company of California

745 SAN JACINTO ST E

Year	Uses	Source
1975	TRUITT RICHARD	General Telephone Company of California

758 SAN JACINTO ST E

Year	Uses	Source
1981	MENDEZ JESUS	General Telephone Company of California

771 SAN JACINTO ST E

Year	Uses	Source
1981	HOLCOMB E E	General Telephone Company of California
1975	HOLCOMB E E	General Telephone Company of California

801 SAN JACINTO ST E

Year	Uses	Source
1996	Cervantez John	GTE Street Address Directory

FINDINGS

Year	Uses	Source
1981	CERVANTEZ JOHN	General Telephone Company of California
1975	CERVANTEZ JOHN	General Telephone Company of California

818 SAN JACINTO ST E

Year	Uses	Source
1981	MURRAY JOHN	General Telephone Company of California

822 SAN JACINTO ST E

Year	Uses	Source
1981	SAMSTAD G	General Telephone Company of California
1975	SAMSTAD G	General Telephone Company of California

841 SAN JACINTO ST E

Year	Uses	Source
1981	LOPEZ FLORENCIO D	General Telephone Company of California
1975	LOPEZ FLORENCIO D	General Telephone Company of California

848 SAN JACINTO ST E

Year	Uses	Source
1981	MARTIN J P	General Telephone Company of California
1975	MARTIN J P	General Telephone Company of California

860 SAN JACINTO ST E

Year	Uses	Source
1975	STAGNER PAULINE	General Telephone Company of California

863 SAN JACINTO ST E

Year	Uses	Source
1975	AFFORTUNATO B	General Telephone Company of California

868 SAN JACINTO ST E

Year	Uses	Source
1996	So Elizabeth	GTE Street Address Directory
1981	REYES GERARDO A	General Telephone Company of California

869 SAN JACINTO ST E

Year	Uses	Source
1981	LAND RONALD	General Telephone Company of California

880 SAN JACINTO ST E

Year	Uses	Source
1981	HARPE RUTH P	General Telephone Company of California

885 SAN JACINTO ST E

Year	Uses	Source
1996	Barraza Jose L	GTE Street Address Directory
1975	BROOKING CHAS S	General Telephone Company of California

SANTA FE ST

525 SANTA FE ST

Year	Uses	Source
1955	Jewett E G	Luskey Brothers& Co Publishers

528 SANTA FE ST

Year	Uses	Source
1955	Flores D E	Luskey Brothers& Co Publishers

547 SANTA FE ST

Year	Uses	Source
1955	Rogers E H Mrs	Luskey Brothers& Co Publishers

553 SANTA FE ST

Year	Uses	Source
1955	Todd H F	Luskey Brothers& Co Publishers

560 SANTA FE ST

Year	Uses	Source
1955	Conger G J	Luskey Brothers& Co Publishers

571 SANTA FE ST

Year	Uses	Source
1955	Ea K W	Luskey Brothers& Co Publishers

574 SANTA FE ST

Year	Uses	Source
1955	Robinson R B	Luskey Brothers& Co Publishers

575 SANTA FE ST

Year	Uses	Source
1955	Johnson A T	Luskey Brothers& Co Publishers

FINDINGS

609 SANTA FE ST

Year	Uses	Source
1955	Annin I G Mrs	Luskey Brothers& Co Publishers

613 SANTA FE ST

Year	Uses	Source
1955	Duncan J I	Luskey Brothers& Co Publishers

628 SANTA FE ST

Year	Uses	Source
1955	Johnson E G	Luskey Brothers& Co Publishers

631 SANTA FE ST

Year	Uses	Source
1955	Grant Albt	Luskey Brothers& Co Publishers

641 SANTA FE ST

Year	Uses	Source
1955	Leonard Edw	Luskey Brothers& Co Publishers
	Monroe Geo	Luskey Brothers& Co Publishers

651 SANTA FE ST

Year	Uses	Source
1955	Scoury J E	Luskey Brothers& Co Publishers

652 SANTA FE ST

Year	Uses	Source
1955	Kelly E	Luskey Brothers& Co Publishers

658 SANTA FE ST

Year	Uses	Source
1955	Becher M E Mrs	Luskey Brothers& Co Publishers

660 SANTA FE ST

Year	Uses	Source
1955	Lisk ESJ Mrs	Luskey Brothers& Co Publishers

661 SANTA FE ST

Year	Uses	Source
1955	Dandino John	Luskey Brothers& Co Publishers

FINDINGS

663 SANTA FE ST

Year	Uses	Source
1955	Phipps Alice Mrs	Luskey Brothers& Co Publishers

686 SANTA FE ST

Year	Uses	Source
1955	52	Luskey Brothers& Co Publishers
	Morrison Denzel	Luskey Brothers& Co Publishers

687 SANTA FE ST

Year	Uses	Source
1955	Hyde G W	Luskey Brothers& Co Publishers

709 SANTA FE ST

Year	Uses	Source
1955	Vacant	Luskey Brothers& Co Publishers

710 SANTA FE ST

Year	Uses	Source
1955	Loper A L	Luskey Brothers& Co Publishers

730 SANTA FE ST

Year	Uses	Source
1955	Allen G E	Luskey Brothers& Co Publishers

738 SANTA FE ST

Year	Uses	Source
1955	Ammons Wm	Luskey Brothers& Co Publishers

739 SANTA FE ST

Year	Uses	Source
1955	Short I D	Luskey Brothers& Co Publishers
	Luithle J H	Luskey Brothers& Co Publishers

744 SANTA FE ST

Year	Uses	Source
1955	Sewell C S	Luskey Brothers& Co Publishers

746 SANTA FE ST

Year	Uses	Source
1955	Howard A	Luskey Brothers& Co Publishers

FINDINGS

757 SANTA FE ST

Year	Uses	Source
1955	Villarreal R A	Luskey Brothers& Co Publishers
	Vacant	Luskey Brothers& Co Publishers

773 SANTA FE ST

Year	Uses	Source
1955	Downey P A	Luskey Brothers& Co Publishers

781 SANTA FE ST

Year	Uses	Source
1955	Larkins C C	Luskey Brothers& Co Publishers

782 SANTA FE ST

Year	Uses	Source
1955	Ervin Zella Mrs	Luskey Brothers& Co Publishers

783 SANTA FE ST

Year	Uses	Source
1955	Hopkins H W	Luskey Brothers& Co Publishers
	Tice L L	Luskey Brothers& Co Publishers

785 SANTA FE ST

Year	Uses	Source
1955	Douglas W M	Luskey Brothers& Co Publishers

821 SANTA FE ST

Year	Uses	Source
1955	Hanna R J	Luskey Brothers& Co Publishers

837 SANTA FE ST

Year	Uses	Source
1955	Streitler J R	Luskey Brothers& Co Publishers

840 SANTA FE ST

Year	Uses	Source
1955	Lopez E M	Luskey Brothers& Co Publishers

847 SANTA FE ST

Year	Uses	Source
1955	Sullivan Antonia Mrs	Luskey Brothers& Co Publishers

850 SANTA FE ST

Year	Uses	Source
1955	Garcia J B	Luskey Brothers& Co Publishers

859 SANTA FE ST

Year	Uses	Source
1955	Sanchez J G	Luskey Brothers& Co Publishers

860 SANTA FE ST

Year	Uses	Source
1955	Garcia Ynes	Luskey Brothers& Co Publishers

870 SANTA FE ST

Year	Uses	Source
1955	Rodriguez Y C	Luskey Brothers& Co Publishers

871 SANTA FE ST

Year	Uses	Source
1955	Munger H B	Luskey Brothers& Co Publishers

884 SANTA FE ST

Year	Uses	Source
1955	Budin Henry	Luskey Brothers& Co Publishers

885 SANTA FE ST

Year	Uses	Source
1955	Gibson Sarah K	Luskey Brothers& Co Publishers

SANTA FE ST E

561 SANTA FE ST E

Year	Uses	Source
2003	HERRERA Saul	Haines & Co Publishers
	RODRIGUEZ Rosa	Haines & Co Publishers
1975	GREEN OLIVER	General Telephone Company of California

566 SANTA FE ST E

Year	Uses	Source
2003	SANCHEZ Andres	Haines & Co Publishers
1975	FLORES LOUISE	General Telephone Company of California

FINDINGS

572 SANTA FE ST E

Year	Uses	Source
2003	SIERRA Jose	Haines & Co Publishers
1975	DAVIS BARBARA ANN	General Telephone Company of California

575 SANTA FE ST E

Year	Uses	Source
2003	HEYNEN Damon	Haines & Co Publishers

581 SANTA FE ST E

Year	Uses	Source
1975	CALDWELL MARY E	General Telephone Company of California
	MCDUFFY ROBT	General Telephone Company of California

582 SANTA FE ST E

Year	Uses	Source
2003	GUTIERREZ Jorge	Haines & Co Publishers

608 SANTA FE ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers
1975	ROBINSON ROLLA	General Telephone Company of California

623 SANTA FE ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers
1975	HUTCHINSON J	General Telephone Company of California

643 SANTA FE ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

653 SANTA FE ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers
1975	EANS LUELLA	General Telephone Company of California

658 SANTA FE ST E

Year	Uses	Source
2003	JOHNSON Ernestine	Haines & Co Publishers

FINDINGS

660 SANTA FE ST E

Year	Uses	Source
2003	JOHNSON Marc	Haines & Co Publishers
	JOHNSON Stephen	Haines & Co Publishers
1975	SCONIERS JOY	General Telephone Company of California

663 SANTA FE ST E

Year	Uses	Source
2003	BUCAYAN Jonathan	Haines & Co Publishers

670 SANTA FE ST E

Year	Uses	Source
2003	GARCIA Roman	Haines & Co Publishers

671 SANTA FE ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers
1975	FISHER ANTHONY E	General Telephone Company of California

672 SANTA FE ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

676 SANTA FE ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

678 SANTA FE ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

680 SANTA FE ST E

Year	Uses	Source
2003	EASHMON Mary	Haines & Co Publishers

685 SANTA FE ST E

Year	Uses	Source
2003	CAIN Yosimien	Haines & Co Publishers

686 SANTA FE ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

FINDINGS

691 SANTA FE ST E

Year	Uses	Source
2003	GOMEZ Hector	Haines & Co Publishers
	MACIAS Javier	Haines & Co Publishers

692 SANTA FE ST E

Year	Uses	Source
2003	CHAN Orlando	Haines & Co Publishers
	CHAN Noh	Haines & Co Publishers

702 SANTA FE ST E

Year	Uses	Source
2003	ARREOLA Adolfo	Haines & Co Publishers

703 SANTA FE ST E

Year	Uses	Source
2003	HILL TOPS MFG CO	Haines & Co Publishers
	GEARY Craig	Haines & Co Publishers
1975	MAURICE SLACKS/CALIF	General Telephone Company of California

708 SANTA FE ST E

Year	Uses	Source
2003	MORGA Alfredo	Haines & Co Publishers

721 SANTA FE ST E

Year	Uses	Source
2003	ARAIZA John	Haines & Co Publishers
	SALSBERRY Dana J	Haines & Co Publishers
1975	HYDE LUCIA	General Telephone Company of California

737 SANTA FE ST E

Year	Uses	Source
2003	HINKLE James	Haines & Co Publishers

755 SANTA FE ST E

Year	Uses	Source
2003	MARTIN Phyllis	Haines & Co Publishers
1975	BYRD MARVIN	General Telephone Company of California

760 SANTA FE ST E

Year	Uses	Source
2003	ORTIZ Sandor	Haines & Co Publishers

FINDINGS

772 SANTA FE ST E

Year	Uses	Source
2003	KOFMAN Izhak	Haines & Co Publishers

781 SANTA FE ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers
1975	SMITH ALLEN D	General Telephone Company of California

792 SANTA FE ST E

Year	Uses	Source
2003	BURGESS Arlelea	Haines & Co Publishers

797 SANTA FE ST E

Year	Uses	Source
2003	VANDERBUR John	Haines & Co Publishers

810 SANTA FE ST E

Year	Uses	Source
2003	BELL William	Haines & Co Publishers

811 SANTA FE ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

814 SANTA FE ST E

Year	Uses	Source
2003	COLEMAN Trinon	Haines & Co Publishers
1975	RODRIGUEZ MANUEL S	General Telephone Company of California

820 SANTA FE ST E

Year	Uses	Source
2003	RODRIGUEZ C	Haines & Co Publishers
1975	BELTRAN FRANK	General Telephone Company of California

835 SANTA FE ST E

Year	Uses	Source
2003	SCHROEDER Herman	Haines & Co Publishers
1975	WARREN GEO W	General Telephone Company of California

841 SANTA FE ST E

Year	Uses	Source
2003	VANDERBUR John	Haines & Co Publishers

858 SANTA FE ST E

Year	Uses	Source
2003	WADLINGTON Stewart	Haines & Co Publishers

867 SANTA FE ST E

Year	Uses	Source
2003	XXXX	Haines & Co Publishers
1975	SULLIVAN NORMA	General Telephone Company of California

874 SANTA FE ST E

Year	Uses	Source
2003	CASTRO Barbara	Haines & Co Publishers
1975	YBARRA CATHY	General Telephone Company of California

879 SANTA FE ST E

Year	Uses	Source
2003	SANCHEZ Abraham	Haines & Co Publishers

TENNIS COURT LN

535 TENNIS COURT LN

Year	Uses	Source
2013	STAR AUTO PARTS INC	Cole Information Services
	METROPOLITAN AUTO WHOLESALE	Cole Information Services
	STAR AUTO PARTS	Cole Information Services
2008	AUTO VALUE PARTS STORE	Haines Company, Inc.
	STAR AUTO PARTS	Haines Company, Inc.
	METROPOLITAN AUTO WHSE	Haines Company, Inc.
2003	METROPOLITAN AUTO WHSE	Haines & Co Publishers
	AUTO VALUE PARTS STORE	Haines & Co Publishers
	STAR AUTO PARTS	Haines & Co Publishers
	SPENCER Charles	Haines & Co Publishers

555 TENNIS COURT LN

Year	Uses	Source
2013	ALUMINUM SEATING CORP	Cole Information Services
2008	ALUMINUM SEATING CORP	Haines Company, Inc.

Year	Uses	Source
2003	ALUMINUM SEATING CORP	Haines & Co Publishers

585 TENNIS COURT LN

Year	Uses	Source
2003	DANG Quy	Haines & Co Publishers
1981	HENDRICKS JIM INC	General Telephone Company of California

TENNIS COURT LN E

535 TENNIS COURT LN E

Year	Uses	Source
1996	STAR AUTO PARTS	GTE Street Address Directory

VALLEY VIEW AVE

527 VALLEY VIEW AVE

Year	Uses	Source
1955	Simpson H U	Luskey Brothers& Co Publishers

540 VALLEY VIEW AVE

Year	Uses	Source
1955	Surace Jos	Luskey Brothers& Co Publishers

550 VALLEY VIEW AVE

Year	Uses	Source
1955	Mistretta Frank	Luskey Brothers& Co Publishers

555 VALLEY VIEW AVE

Year	Uses	Source
1955	Ozzies Whsle Meats	Luskey Brothers& Co Publishers

560 VALLEY VIEW AVE

Year	Uses	Source
1955	Ulery L H	Luskey Brothers& Co Publishers

592 VALLEY VIEW AVE

Year	Uses	Source
1955	Cross E H	Luskey Brothers& Co Publishers

FINDINGS

VALLEY VIEW AVE S

542 VALLEY VIEW AVE S

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

558 VALLEY VIEW AVE S

Year	Uses	Source
2003	ALLEN Peter	Haines & Co Publishers
	MORGA Santos	Haines & Co Publishers

567 VALLEY VIEW AVE S

Year	Uses	Source
2003	XXXX	Haines & Co Publishers
1981	BIG JOHNS MEATS	General Telephone Company of California
1975	GLENNS G & H MEAT CO	General Telephone Company of California
	BIG JOHNS MEATS	General Telephone Company of California

586 VALLEY VIEW AVE S

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

625 VALLEY VIEW AVE S

Year	Uses	Source
2003	XXXX	Haines & Co Publishers
1981	BONNER MARY	General Telephone Company of California

916 VALLEY VIEW AVE S

Year	Uses	Source
2003	ROBERTSON Andrea	Haines & Co Publishers
	ROBERTSON Jason	Haines & Co Publishers
1975	BOTELLO JOHN	General Telephone Company of California

924 VALLEY VIEW AVE S

Year	Uses	Source
2003	GASCA Andy J	Haines & Co Publishers

975 VALLEY VIEW AVE S

Year	Uses	Source
2003	XXXX	Haines & Co Publishers

FINDINGS

977 VALLEY VIEW AVE S

Year	***Uses***	***Source***
2003	XXXX	Haines & Co Publishers
1981	GINSBERG PATRICIA	General Telephone Company of California

1114 VALLEY VIEW AVE S

Year	***Uses***	***Source***
2003	REED Sandra	Haines & Co Publishers

FINDINGS

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched	Address Not Identified in Research Source
SEC of S Lena Road & Tennis CT Ln	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

Address Researched	Address Not Identified in Research Source
1114 VALLEY VIEW AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
149 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1923, 1922
150 S LENA RD	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
152 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1936, 1934, 1931, 1930, 1923, 1922
155 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1936, 1934, 1931, 1930, 1926, 1923, 1922
161 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1926, 1923, 1922
167 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1926, 1923, 1922
170 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1923, 1922
171 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1936, 1934, 1931, 1930, 1926, 1923, 1922
175 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1926, 1923, 1922
175 LENA RD S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
175 S LENA RD	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
175 S LENA RD	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
176 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
177 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
181 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
182 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
183 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1926, 1923, 1922
184 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1936, 1934, 1931, 1930, 1926, 1923, 1922
185 S 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
186 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1926, 1923, 1922
195 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1936, 1934, 1931, 1930, 1926, 1923, 1922
200 LENA RD S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
200 S LENA RD	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
200 S LENA RD	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
201 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
203 LENA RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
206 S 5 VIRGINIA AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
210 LENA RD S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
210 S LENA RD	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
215 2ND AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
216 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1926, 1922
216 2ND AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
216 S 2ND AVE	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
216 S 2ND AVE	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
220 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
227 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
228 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1926, 1922
233 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1926, 1922
235 S 3 CHURCH ICAGO DR RUNNING SPR	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
236 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
237 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
238 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1926, 1922
239 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
243 2ND S	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
243 S 2ND	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
243 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
245 2 SLENORE AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
249 2 ERIALTO AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
250 LENA RD S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
250 S LENA RD	2013, 2003, 2002, 1995, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
250 S LENA RD	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
251 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1926, 1922
252 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
253 LENA RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
263 S 3RD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
265 LENA RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
268 S 3 HILLVIEW HIGIAND	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
269 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
269 S 5 VILLA HIGHLAND	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
271 S 3RD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
273 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
275 LENA RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
277 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
280 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
280 LENA DR S	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
280 LENA RD S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
280 S LENA RD	2013, 2003, 2002, 1995, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
280 S LENA RD	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
284 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
285 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
285 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
287 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1938, 1936, 1934, 1930, 1926, 1922
289 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
290 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
290 S 5TH	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
291 2 NHERRNGTN AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
291 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
293 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
293 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
294 2ND AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
294 S 2ND AVE	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
294 S 2ND AVE	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
295 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
296 S 3RD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
299 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1938, 1936, 1934, 1930, 1926, 1922
303 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
303 S 3RD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
304 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
310 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
318 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
319 2ND S	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
319 S 2ND	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
320 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
322 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1926, 1922
324 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1926, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
327 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
328 S 3RD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
329 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
335 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
336 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
339 S 3RD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
339 S 5 NGENEVIEVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
353 S 3RD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
354 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
360 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1930, 1926, 1922
363 DOOLITTLE AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
363 DOOLITTLE DR	2013, 2008, 2003, 2002, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
363 DOOLITTLE RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
363 S DOOLITTLE AVE	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
363 S DOOLITTLE AVE	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
367 2ND AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1922
378 S 3RD	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
384 2ND AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
384 S 2ND AVE	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
384 S 2ND AVE	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
405 S 5TH	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
425 5 RANCHO AVE	2013, 2008, 2003, 2002, 1996, 1995, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
427 S 5TH	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
445 S 5TH	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
461 S 5TH	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
485 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
495 S 5 NSTODDARD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
499 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
499 E MILL ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
499 E MILL ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
499 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
502 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
510 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
517 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
517 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1995, 1991, 1990, 1985, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
518 SAN JACINTO ST	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
519 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
519 E MILL ST	2013, 2003, 2002, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
519 E MILL ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
519 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
519 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
521 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
521 E MILL ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
521 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
521 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
523 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
523 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1995, 1991, 1990, 1985, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
525 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
526 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
527 E MILL ST	2013, 2003, 2002, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
527 E MILL ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
527 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
527 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
527 VALLEY VIEW AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
528 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
530 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
532 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
534 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
535 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
535 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
535 E TENNIS COURT LN	2013, 2008, 2003, 2002, 1996, 1995, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
535 GIFFORD AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
535 S GIFFORD AVE	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
535 TENNIS COURT LN	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
535 TENNIS COURT LN	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
535 TENNIS COURT LN E	2013, 2008, 2003, 2002, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
540 VALLEY VIEW AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
542 S VALLEY VIEW AVE	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
542 VALLEY VIEW AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
544 GIFFORD AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
544 S GIFFORD AVE	2013, 2003, 2002, 1996, 1995, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
544 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
545 GIFFORD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
545 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
547 GIFFORD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
547 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
548 GIFFORD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
549 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
549 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1995, 1991, 1990, 1985, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
550 VALLEY VIEW AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
553 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
555 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
555 TENNIS COURT LN	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
555 TENNIS COURT LN	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
555 VALLEY VIEW AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
558 S VALLEY VIEW AVE	2013, 2003, 2002, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
558 VALLEY VIEW AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
560 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
560 VALLEY VIEW AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
561 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
561 GIFFORD AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
561 S GIFFORD AVE	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
561 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
562 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
562 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
563 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
565 GIFFORD AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
565 S GIFFORD AVE	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
566 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
566 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
567 GIFFORD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
567 S VALLEY VIEW AVE	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
567 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
567 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
567 VALLEY VIEW AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
568 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
569 GIFFORD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
570 E MILL ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
570 E MILL ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
570 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
571 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
572 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
572 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
574 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
575 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
575 GIFFORD AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
575 S GIFFORD AVE	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
575 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
575 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
575 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
576 SAN JACINTO ST	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
577 GIFFORD AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
577 S GIFFORD AVE	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
578 GIFFORD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
580 E MILL ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
580 E MILL ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
580 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
581 E SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
581 GIFFORD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
581 SANTA FE ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
582 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
582 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
582 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
584 SAN JACINTO ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
585 E MILL ST	2013, 2003, 2002, 1996, 1995, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
585 E TENNIS COURT LN	2013, 2008, 2003, 2002, 1996, 1995, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
585 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
585 TENNIS COURT LN	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
586 VALLEY VIEW AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
588 GIFFORD AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
589 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
590 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
590 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
592 VALLEY VIEW AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
593 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
593 SAN JACINTO ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
593 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1995, 1991, 1990, 1985, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
595 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
595 E MILL ST	2013, 2003, 2002, 1995, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
595 E MILL ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
595 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
600 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
603 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
606 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
606 E MILL ST	2013, 2008, 2003, 2002, 1995, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
606 E MILL ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
606 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
608 E SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
608 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
608 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
609 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
613 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
621 GIFFORD AVE	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
623 E SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
623 GIFFORD AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
623 S GIFFORD AVE	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
623 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
625 S VALLEY VIEW AVE	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
625 VALLEY VIEW AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
628 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
629 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
631 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
633 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
633 E MILL ST	2013, 2003, 2002, 1996, 1995, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
633 E MILL ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
633 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
633 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
637 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
641 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
641 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
642 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
643 E SANTA FE ST	2013, 2003, 2002, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
643 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
643 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
645 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
651 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
652 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
653 E SANTA FE ST	2013, 2003, 2002, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
653 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
656 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
657 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
658 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
658 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
658 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
659 SAN JACINTO ST	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
659 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
660 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
660 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
660 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
661 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
663 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
663 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
663 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
665 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
669 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
670 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
670 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
671 SAN JACINTO ST	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
671 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
672 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
672 SAN JACINTO ST	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
672 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
675 SAN JACINTO ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
676 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
676 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
677 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
677 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
677 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
677 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
678 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
678 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
680 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
680 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
680 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
685 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
686 E MILL ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
686 E MILL ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
686 E SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
686 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
686 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
686 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
687 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
689 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
689 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
691 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
691 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
691 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
692 E SANTA FE ST	2013, 2003, 2002, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
692 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
696 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
702 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
702 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
702 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
702 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
703 E SANTA FE ST	2013, 2003, 2002, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
703 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
708 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
708 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
709 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
710 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
711 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
711 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
715 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
715 E MILL ST	2013, 2003, 2002, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
715 E MILL ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
715 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
715 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
719 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
721 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
721 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
721 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
721 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
727 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
730 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
730 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
735 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
735 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
737 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
738 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
739 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
740 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
744 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
745 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
745 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
746 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1923, 1922
746 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
747 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
749 E MILL ST	2013, 2003, 2002, 1996, 1995, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
749 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
751 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
755 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
755 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
757 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
757 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
758 SAN JACINTO ST	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
758 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
759 SAN JACINTO	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
759 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
760 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
760 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
761 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
765 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
765 MILL ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
768 SAN JACINTO ST	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
771 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
771 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
772 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
772 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
773 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
774 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
777 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
781 E SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
781 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
781 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
782 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
783 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
783 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
785 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
785 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
792 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
792 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
792 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
795 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
797 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
797 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
799 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
800 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
801 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
801 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1995, 1991, 1990, 1985, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
804 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
805 SAN JACINTO ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
806 MILL ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
807 MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
807 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
808 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
808 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1990, 1985, 1980, 1975, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
808 MILL ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
808 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
809 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
810 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
810 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
811 SAN JACINTO ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
811 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
814 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
814 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
814 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
815 SAN JACINTO	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
815 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
817 E MILL ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
817 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
818 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
818 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
819 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
820 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
820 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
820 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
821 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
822 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
822 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
823 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
823 E MILL ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
823 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
824 MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
824 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
825 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
826 MILL ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
832 SAN JACINTO ST	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
833 E MILL ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
833 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
835 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
835 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
837 E MILL ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
837 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
837 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
838 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
840 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
841 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
841 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
841 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
841 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
842 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
844 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
845 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
847 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
847 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
848 MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
848 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
848 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
849 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
849 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
850 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
851 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
851 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
853 E SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
858 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
858 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
859 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
859 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
860 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
860 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
860 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
862 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
863 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
863 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
864 MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
864 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
865 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
867 E SANTA FE ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
867 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
868 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
868 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
869 SAN JACINTO	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
869 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
869 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
870 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
871 SAN JACINTO ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
871 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
872 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
874 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
874 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
874 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
874 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
875 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
875 E MILL ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
875 E MILL ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
875 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
877 SAN JACINTO ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
879 E SANTA FE ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
879 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
879 SANTA FE ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
880 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
880 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
880 E MILL ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
880 MILL ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
880 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
883 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
884 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
885 E MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
885 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
885 SAN JACINTO ST E	2013, 2008, 2003, 2002, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
885 SANTA FE ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
888 E MILL	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
888 MILL ST E	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
890 E MILL ST	2013, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
890 E MILL ST	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
893 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
903 SAN JACINTO ST	2013, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
916 VALLEY VIEW AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
924 S VALLEY VIEW AVE	2013, 2008, 2003, 2002, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
924 VALLEY VIEW AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
932 MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
940 MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1946, 1945, 1941, 1940, 1938, 1934, 1931, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
948 MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1946, 1945, 1941, 1940, 1938, 1934, 1931, 1926, 1923, 1922
950 MILL ST	2013, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1946, 1945, 1941, 1940, 1938, 1934, 1931, 1926, 1923, 1922
975 VALLEY VIEW AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
977 VALLEY VIEW AVE S	2013, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

1583

File: 17A-68
T.B. #1583

GENERAL ORDER NO. 96B-99787C
WORK RELEASE AUTHORIZATION NO.: K-19

DRAFT
TECHNICAL MEMORANDUM
RESULTS
OF THE
CONFIRMATION STUDY ADDENDUM NUMBER 1
AND EXPANDED SOURCE INVESTIGATION
ADDENDUM NUMBER 1 WORK PLAN
FOR
NORTON AIR FORCE BASE
SAN BERNARDINO, CALIFORNIA

Prepared for
HAZARDOUS WASTE REMEDIAL ACTIONS PROGRAM
Environmental Management and Enrichment Facilities
Oak Ridge, Tennessee 37831-7606
managed by
LOCKHEED MARTIN ENERGY SYSTEMS, INC.
for the
U.S. DEPARTMENT OF ENERGY
under contract DE-AC05-84OR21400
and
AIR FORCE BASE DISPOSAL AGENCY
Norton Air Force Base
California 92409

Prepared by
CDM FEDERAL PROGRAMS CORPORATION
100 Pringle Avenue, Suite 500
Walnut Creek, California 94596

November 8, 1995
Revision 1
DOCUMENT CONTROL NO. 7900-027-TM-CTKR

TECHNICAL MEMORANDUM

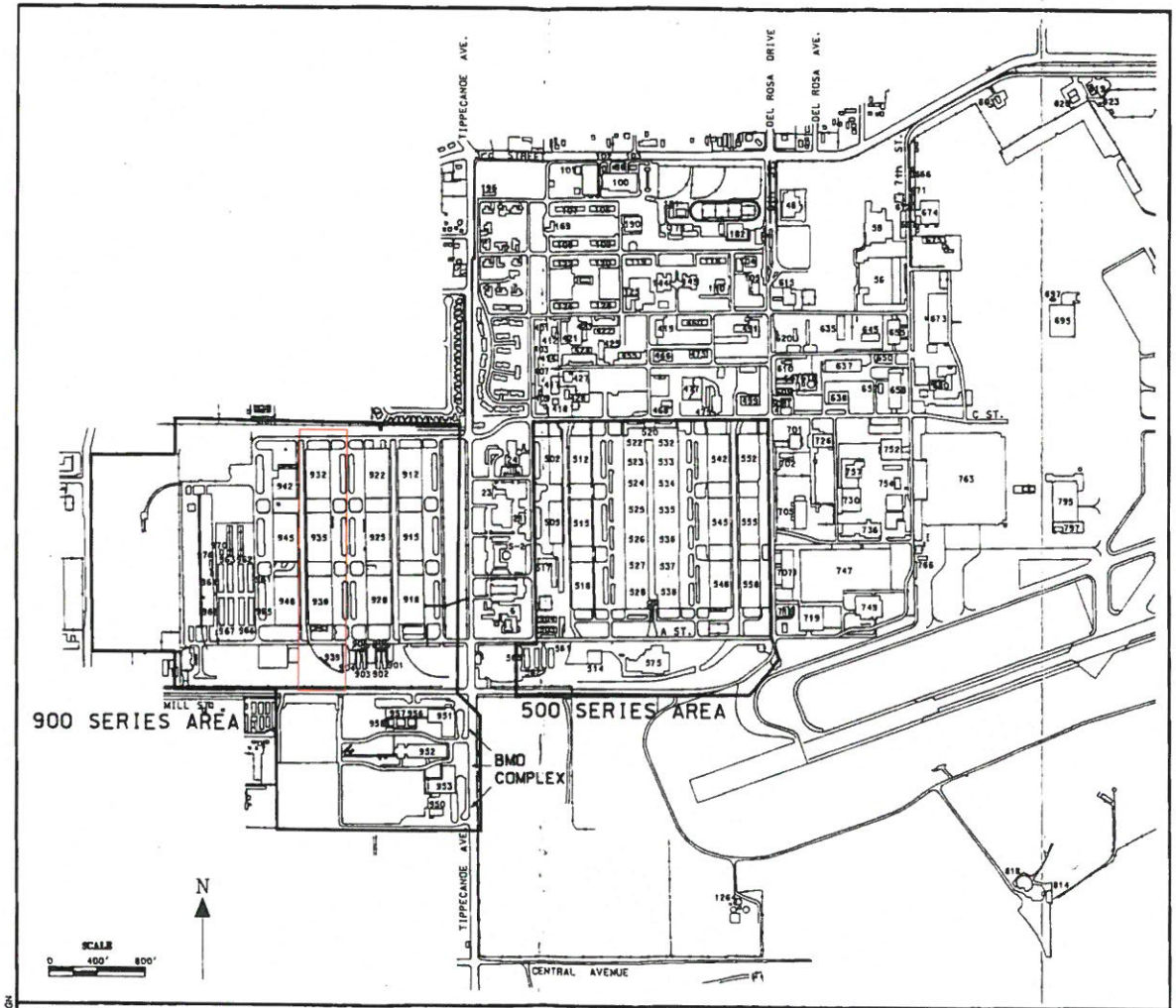
RESULTS OF THE CONFIRMATION STUDY ADDENDUM NUMBER 1 AND EXPANDED SOURCE INVESTIGATION ADDENDUM NUMBER 1 WORKPLAN NORTON AIR FORCE BASE

1.0 INTRODUCTION

1.1 CONFIRMATION STUDY ADDENDUM NUMBER 1 OVERVIEW

Between December 8, 1994, and February 13, 1995, the Confirmation Study Addendum Number 1 field work (CS Addendum) was performed at the former Norton Air Force Base (AFB) San Bernardino, California. The CS Addendum program consisted of 23 areas of concern (AOCs) including the investigation of 18 Satellite Waste Accumulation points (SWAPs); the Building 620 vehicle washdown pad area; the 500 and 900 series building areas; the Detachment 10/Ballistic Missile Organization (BMO) area and two areas within the BMO area; and a former communications facility on a separate land parcel north of the northeastern base boundary. The locations of the 23 AOCs are presented in Fig. 1. The areas of investigation and the scope of this study are presented in the document *Final Addendum No. 1 to the Final Basewide Confirmation Study Work Plan for Norton Air Force Base, San Bernardino, California* (CDM Federal Programs Corporation, 1994b). This technical memorandum (TM) presents only the results of the CS Addendum and the scope of the Expanded Source Investigation Addendum Number 1 (ESI Addendum) for four locations with potential chemical contamination problems and an additional investigation at the former Small Arms Firing Range Area.

The objective of this technical memorandum is to provide a summary of the results of the CS Addendum so that Norton AFB decision makers can become familiar with the nature of contamination (if any) at any of the locations investigated and develop the scope of the expanded source investigation to define contamination extent and need for a remedial action.



CDM FEDERAL PROGRAMS CORPORATION
a subsidiary of Camp Dresser & McKee Inc.

FEATURES OF 500 SERIES BUILDINGS
900 SERIES BUILDINGS, AND BMO COMPLEX

Figure 3

C:\DGN\RECS94.DGN

2.1.3 500 Series Buildings Recommendations

Based on the low level and infrequent nature of contaminants detected in soil-gas, further investigation of this area is not warranted.

2.2 AOC 46 - 900 SERIES BUILDINGS

2.2.1 Building Descriptions

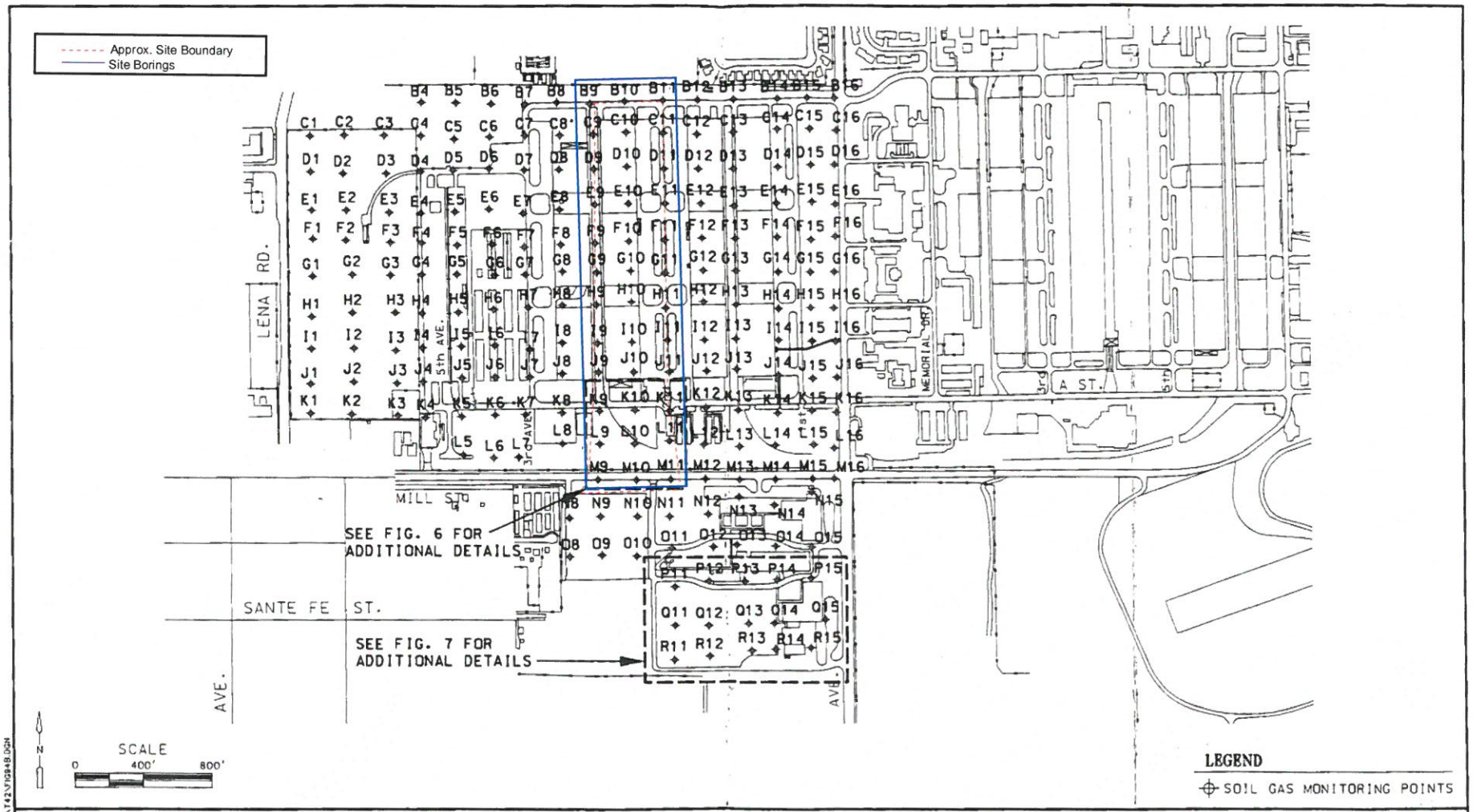
The 900 series buildings are located at the western edge of the base and are bounded by Tippecanoe Avenue and the western base boundary (Fig. 3). The 900 series buildings were used primarily for supply and depot warehouses, and administrative offices. With two exceptions, Buildings 922/942/945 and Building 948, the Defense Reutilization and Marketing Office (DRMO), the existing records show no identified quantities of hazardous materials to have been used in these buildings.

Buildings 992/942/945 were established in 1968 by the Air Logistics Command to repair Titan missiles. Small quantities of chemicals were used in the repair process. There are no industrial waste drums, sumps, or underground storage tanks associated with these buildings.

Building 948/DRMO. The DRMO was the primary facility used for the temporary storage of hazardous waste (55-gal drums). The DRMO facility has been closed under Resource Conservation and Recovery Act (RCRA) regulations.

2.2.2 900 Series Building Results

A total of 178 primary and 18 duplicate soil-gas samples were collected from 177 points within the 900 Series Building area north of BMO (two samples were collected at 15 and 30 ft bgs at SG-L10). The majority of the sampling was performed along a 200-ft by 200-ft grid as shown in Fig. 5. Additional sampling was performed near Building 939. Table 9 lists the results of soil-gas samples in the 900 Series Building and BMO areas.



CDM FEDERAL PROGRAMS CORPORATION
a subsidiary of Camp Dresser & McKee Inc.

SAMPLING GRID FOR 900 SERIES BUILDINGS AND DET 10/BMO

Figure 5

TABLE 9

900 SERIES BUILDING AREA
BMO/DETACHMENT 10 AREA
ON-SITE LABORATORY
SOIL GAS RESULTS (µg/L)

Sample Location:				SG-B4	SG-B5	SG-B6	SG-B7	SG-B8	SG-B9	SG-B10	SG-B11	SG-B12	SG-B13	SG-B14	SG-B15	SG-B16
Date:				2/3/95	2/2/95	2/2/95	12/28/94	12/28/94	12/29/94	12/30/94	12/27/94	12/27/94	12/22/94	12/22/94	12/21/94	
Probe Depth:				15	15	15	15	15	15	15	14	15	15	15	15	
COMPOUND																
1,1-DCE				<1.0	<1.0	<1.0	5.7	5.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS
1,1,1-TCA				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
PCE				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzene				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.54J	
Toluene				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Acetone				<1.0	1.5	0.55J	3.5B	3.6B	6.1	6.3	<1.0	<1.0	<1.0	<1.0	<6.0	
MEK				<1.0	<1.0	<1.0	4.5B	4.3B	3.5	3.8	<1.0	<1.0	<1.0	<1.0	<5.0	
Sample Location:											SG-B11D					
Date:											12/27/94					
Probe Depth:											14					
COMPOUND											Duplicate					
1,1-DCE											<1.0					
1,1,1-TCA											<1.0					
PCE											<1.0					
Benzene											<1.0					
Toluene											<1.0					
Acetone											<1.0					
MEK											<1.0					

Sample Location:	SG-C1	SG-C2	SG-C3	SG-C4	SG-C5	SG-C6	SG-C7	SG-C8	SG-C9	SG-C10	SG-C11	SG-C12	SG-C13	SG-C14	SG-C15	SG-C16
Date:	1/18/95	1/20/95	1/20/95	2/3/95	12/30/94	12/30/94	12/28/94	12/28/94	12/29/94	12/20/94	12/27/94	12/29/94	12/28/94	12/22/94	12/21/94	12/21/94
Probe Depth:	15	15	15	15	13	12	15	15	15	15	15	13	13	15	15	15
COMPOUND																
1,1-DCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.86J	3.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.55J	0.52J
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acetone		1.2	<1.0	<1.0	<1.0	<1.0	5.7	6.7B	5.3B	7.4	<1.0	<1.0	<1.0	<1.0	<6.0	<6.0
MEK		<1.0	<1.0	<1.0	<1.0	<1.0	4.6	4.7B	2.7B	3.7	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0
Sample Location:			SG-C3D					SG-C8D								
Date:			1/20/95					12/28/94								
Probe Depth:			15					15								
COMPOUND			Duplicate					Duplicate								
1,1-DCE			<1.0					0.59J								
1,1,1-TCA			<1.0					<1.0								
PCE			<1.0					<1.0								
Benzene			<1.0					<1.0								
Toluene			<1.0					<1.0								
Acetone			5.0					6.6B								
MEK			<1.0					4.5B								

TABLE 9(continued)

900 SERIES BUILDING AREA
BMO/DETACHMENT 10 AREA
ON-SITE LABORATORY
SOIL GAS RESULTS (µg/L)

Sample Location:	SG-D1	SG-D2	SG-D3	SG-D4	SG-D5	SG-D6	SG-D7	SG-D8	SG-D9	SG-D10	SG-D11	SG-D12	SG-D13	SG-D14	SG-D15	SG-D16
Date:	1/18/95	1/20/95	1/23/95	12/20/94	12/20/94	12/20/94	12/21/94	12/28/94	12/21/94	12/20/94	12/27/94	12/29/94	12/28/94	12/22/94	12/21/94	12/21/94
Probe Depth:	15	15	15	15	15	15	15	15	15	15	15	13	14	15	15	15
COMPOUND																
1,1-DCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.2	0.80J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.38J	0.58J
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.20J	<1.0
Acetone	14	2.7	1.6	0.7J	0.94J	1.3	<1.0	6.3B	5.6B	5.8	<1.0	<1.0	<1.0	<1.0	<6.0	<6.0
MEK	1.6	0.9J	1.6	3.0	4.3	5.5	3.9	4.5B	2.9B	3.6	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0

Sample Location:	SG-D6D
Date:	12/20/94
Probe Depth:	15
COMPOUND	Duplicate
1,1-DCE	<1.0
1,1,1-TCA	<1.0
PCE	<1.0
Benzene	<1.0
Toluene	<1.0
Acetone	0.77J
MEK	5.2

Sample Location:	SG-E1	SG-E2	SG-E3	SG-E4	SG-E5	SG-E6	SG-E7	SG-E8	SG-E9	SG-E10	SG-E11	SG-E12	SG-E13	SG-E14	SG-E15	SG-E16
Date:	1/19/95	1/20/95	1/23/95	12/20/94	12/22/94	12/22/94		12/28/94	12/29/94	12/30/94	12/27/94	12/27/94	12/28/94	12/22/94	12/21/94	12/21/94
Probe Depth:	15	15	15	15	15	15		15	15	15	15	12	12	15	15	15
COMPOUND																
1,1-DCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	9.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.30J	<1.0
Acetone	4.8	1.2	2.4	0.85J	<1.0	<1.0		6.3B	6.1	8.2	<1.0	<1.0	<1.0	<1.0	<6.0	<6.0
MEK	1.5	1.1	1.8	3.1	2.8	3.0		6.9B	3.3	4.2	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0

Sample Location:	SG-E9D	SG-E15D
Date:	12/29/94	12/21/94
Probe Depth:	15	15
COMPOUND	Duplicate	Duplicate
1,1-DCE	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0
PCE	<1.0	<1.0
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Acetone	6.6	<6.0
MEK	3.7	<5.0

TABLE 9(continued)

900 SERIES BUILDING AREA
BMO/DETACHMENT 10 AREA
ON-SITE LABORATORY
SOIL GAS RESULTS (µg/L)

Sample Location:	SG-F1	SG-F2	SG-F3	SG-F4	SG-F5	SG-F6	SG-F7	SG-F8	SG-F9	SG-F10	SG-F11	SG-F12	SG-F13	SG-F14	SG-F15	SG-F16
Date:	1/19/95	1/20/95	1/18/95	12/20/94	12/22/94	12/22/94	12/28/94	12/28/94	12/29/94	12/30/94	12/27/94	12/29/94	12/28/94	12/22/94	12/21/94	12/21/94
Probe Depth:	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	12
COMPOUND																
1,1-DCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.75J	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.34J	<1.0
Acetone	2.1	<1.0	<1.0	0.89J	0.5J	<1.0	2.8B	<1.0	7.0	6.2	<1.0	<1.0	<1.0	<1.0	<6.0	<6.0
MEK	1.5	<1.0	<1.0	3.2	3.8	2.9	4.0B	<1.0	3.9	3.6	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0

Sample Location:													SG-F13D			
Date:													12/28/94			
Probe Depth:													15			
COMPOUND													Duplicate			
1,1-DCE													<1.0			
1,1,1-TCA													<1.0			
PCE													<1.0			
Benzene													<1.0			
Toluene													<1.0			
Acetone													<1.0			
MEK													<1.0			

Sample Location:	SG-G1	SG-G2	SG-G3	SG-G4	SG-G5	SG-G6	SG-G7	SG-G8	SG-G9	SG-G10	SG-G11	SG-G12	SG-G13	SG-G14	SG-G15	SG-G16
Date:	1/19/95	1/20/95	1/23/95	12/20/94	12/20/94	12/22/94	12/28/94	12/28/94	12/29/94	12/29/94	12/27/94	12/29/94	12/28/94	12/21/94	12/21/94	12/21/94
Probe Depth:	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
COMPOUND																
1,1-DCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.63J	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.33J	<1.0
Acetone	5.5	1.5	1.1	0.92J	<1.0	<1.0	4.1B	5.3	8.2	6.8	<1.0	<1.0	<1.0	<1.0	<6.0	<6.0
MEK	1.9	<1.0	0.94J	3.3	2.1	3.5	4.2B	3.5	3.9	3.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0

Sample Location:			SG-G3D			SG-G6D										
Date:			1/23/95			12/22/95										
Probe Depth:			15			15										
COMPOUND			Duplicate			Duplicate										
1,1-DCE			<1.0			<1.0										
1,1,1-TCA			<1.0			<1.0										
PCE			<1.0			<1.0										
Benzene			<1.0			<1.0										
Toluene			<1.0			<1.0										
Acetone			3.1			<1.0										
MEK			1.4			3.5										

TABLE 9(continued)

900 SERIES BUILDING AREA
BMO/DETACHMENT 10 AREA
ON-SITE LABORATORY
SOIL GAS RESULTS (µg/L)

Sample Location:	SG-H1	SG-H2	SG-H3	SG-H4	SG-H5	SG-H6	SG-H7	SG-H8	SG-H9	SG-H10	SG-H11	SG-H12	SG-H13	SG-H14	SG-H15	SG-H16
Date:	1/19/95	1/20/95	1/18/95	12/21/94	12/22/94	12/22/94	12/27/94	12/29/94	12/29/94	12/30/94	12/27/94	12/27/94	12/28/94	12/22/94	12/21/94	12/21/94
Probe Depth:	15	15	15	15	15	15	15	15	15	15	15	15	13	15	15	13
COMPOUND																
1,1-DCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.65J	2.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acetone	3.6	<1.0	<1.0	<1.0	0.58J	<1.0	5.6	3.0B	9.1	5.7	<1.0	<1.0	<1.0	<1.0	<6.0	<6.0
MEK	1.5	<1.0	1.0	1.5	3.8	2.7	2.5	2.7B	3.5	2.4	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0

Sample Location:	SG-H15D
Date:	12/21/94
Probe Depth:	15
COMPOUND	Duplicate
1,1-DCE	<1.0
1,1,1-TCA	<1.0
PCE	<1.0
Benzene	<1.0
Toluene	<1.0
Acetone	<6.0
MEK	<5.0

Sample Location:	SG-I1	SG-I2	SG-I3	SG-I4	SG-I5	SG-I6	SG-I7	SG-I8	SG-I9	SG-I10	SG-I11	SG-I12	SG-I13	SG-I14	SG-I15	SG-I16
Date:	1/19/95	1/20/95	1/18/95	12/21/94	12/22/94	12/27/94	12/29/94	12/29/94	12/29/94	1/12/95	12/27/94	12/30/94	12/28/94	12/22/94	12/21/94	12/21/94
Probe Depth:	15	15	15	15	15	15	15	15	15	15	15	14	13	15	15	13
COMPOUND																
1,1-DCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.58J	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acetone	4.6	<1.0	<1.0	<1.0	<1.0	<1.0	8.8B	<1.0	4.4	3.9	<1.0	<1.0	<1.0	<1.0	<6.0	<6.0
MEK	1.7	<1.0	<1.0	2.5	2.5	3.1	3.6B	<1.0	3.2	1.6	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0

Sample Location:	SG-I10D
Date:	1/12/95
Probe Depth:	15
COMPOUND	Duplicate
1,1-DCE	<1.0
1,1,1-TCA	<1.0
PCE	<1.0
Benzene	<1.0
Toluene	<1.0
Acetone	1.9
MEK	1.1

TABLE 9(continued)

900 SERIES BUILDING AREA
BMO/DETACHMENT 10 AREA
ON-SITE LABORATORY
SOIL GAS RESULTS (µg/L)

Sample Location:	SG-J1	SG-J2	SG-J3	SG-J4	SG-J5	SG-J6	SG-J7	SG-J8	SG-J9	SG-J10	SG-J11	SG-J12	SG-J13	SG-J14	SG-J15	SG-J16
Date:	1/19/95	1/20/95	1/31/95		12/22/94	12/22/94	12/27/94	12/28/94	12/29/94	12/30/94	12/27/94	12/30/94	12/29/94	12/29/94	12/21/94	12/21/94
Probe Depth:	15	15	15		15	15	15	15	15	15	15	10	15	15	15	15
COMPOUND																
1,1-DCE	<1.0	<1.0	<1.0	NS	<1.0	<1.0	0.55J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.57J	<1.0
Toluene	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.26J	<1.0
Acetone	2.3	<1.0	12		0.89J	<1.0	9.5B	4.0	8.2	8.6B	<1.0	<1.0	<1.0	<1.0	<6.0	<6.0
MEK	1.7	<1.0	1.3		4.0	2.5	2.7B	2.3	3.3	3.7B	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0

Sample Location:	SG-J1D	SG-J3D	SG-J10D
Date:	1/19/95	1/31/95	12/30/94
Probe Depth:	15	15	15
COMPOUND	Duplicate	Duplicate	Duplicate
1,1-DCE	<1.0	<1.0	0.40J
1,1,1-TCA	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0
Acetone	3.3	6.0	6.1B
MEK	1.4	<1.0	3.8B

Sample Location:	SG-K1	SG-K2	SG-K3	SG-K4	SG-K5	SG-K6	SG-K7	SG-K8	SG-K9	SG-K10	SG-K11	SG-K12	SG-K13	SG-K14	SG-K15	SG-K16
Date:	1/20/95	1/22/95	1/18/95	12/21/94		12/30/94	2/2/95		12/30/94	1/11/95	12/27/94	12/30/94	12/29/94	12/22/94	12/21/94	12/20/94
Probe Depth:	15	15	15	15		15	15		15	15	15	14	13	15	15	15
COMPOUND																
1,1-DCE	<1.0	<1.0	<1.0	<1.0	NS	<1.0	<1.0	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.68J	<0.69J
Toluene	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.30J	0.28J
Acetone	3.5	2.4	1.5	<1.0		1.9	<1.0		6.7	3.3	<1.0	<1.0	<1.0	<1.0	<6.0	<6.0
MEK	9.5	<1.0	0.96J	1.3		3.1	<1.0		3.8	1.7	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0

Sample Location:	SG-K3D	SG-K6D
Date:		13/30/94
Probe Depth:		15
COMPOUND	Duplicate	Duplicate
1,1-DCE	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0
PCE	<1.0	<1.0
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Acetone	7.7	3.7
MEK	1.2	3.9

TABLE 9(continued)

900 SERIES BUILDING AREA
BMO/DETACHMENT 10 AREA
ON-SITE LABORATORY
SOIL GAS RESULTS (µg/L)

Sample Location:	SG-L5	SG-L6	SG-L7	SG-L8	SG-L9	SG-L10	SG-L11	SG-L12	SG-L13	SG-L14	SG-L15	SG-L16
Date:	12/21/94	12/21/94	12/21/94	12/21/94	12/21/94	12/21/94	12/27/94	12/30/94	12/29/94	12/22/94	12/21/94	12/20/94
Probe Depth:	15	15	15	15	15	15	15	15	13	15	15	15
COMPOUND												
1,1-DCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0	<1.0	2.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.59J	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0	4.5B	<1.0	<1.0	<1.0	<1.0	0.28J	<1.0
Acetone	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<6.0	<6.0
MEK	2.4	2.7	2.0	3.2	3.9	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0

Sample Location:	SG-L9D	SG-L13D
Date:	12/21/94	12/29/94
Probe Depth:	15	13
COMPOUND	Duplicate	Duplicate
1,1-DCE	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0
PCE	<1.0	<1.0
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Acetone	<1.0	<1.0
MEK	2.5	<1.0

Sample Location:	SG-L9.5	SG-L10	SG-L10.5
Date:	1/18/95	2/1/95	1/18/95
Probe Depth:	15	30	15
COMPOUND			
1,1-DCE	<1.0	<1.0	<1.0
1,1,1-TCA	1.1	5.5	0.86B
PCE	<1.0	<1.0	<1.0
Benzene	9.7B	1.2B	3.9B
Toluene	1.9B	<1.0	2.7B
Acetone	<1.0	<1.0	<1.0
MEK	<1.0	<1.0	<1.0

Sample Location:	SG-KL9.5	SG-KL10
Date:	2/6/95	2/1/95
Probe Depth:	15	15
COMPOUND		
1,1-DCE	<1.0	<1.0
1,1,1-TCA	0.55J	6.2
PCE	<1.0	<1.0
Benzene	<1.0	2.2B
Toluene	<1.0	<1.0
Acetone	<1.0	2.2
MEK	<1.0	<1.0

Sample Location:	SG-ML10
Date:	2/1/95
Probe Depth:	15
COMPOUND	
1,1-DCE	<1.0
1,1,1-TCA	<1.0
PCE	<1.0
Benzene	<1.0
Toluene	<1.0
Acetone	<1.0
MEK	<1.0

TABLE 9(continued)

900 SERIES BUILDING AREA
BMO/DETACHMENT 10 AREA
ON-SITE LABORATORY
SOIL GAS RESULTS (µg/L)

Sample Location:	SG-M9	SG-M10	SG-M11	SG-M12	SG-M13	SG-M14	SG-M15	SG-M16
Date:	1/18/95	1/18/95	1/18/95	1/18/95	1/18/95	1/10/95	1/10/95	1/10/95
Probe Depth:	15	15	15	15	15	15	15	15
COMPOUND								
1,1-DCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acetone	<1.0	<1.0	<1.0	<1.0	2.9	<1.0	0.69J	<1.0
MEK	0.7J	1.2	<1.0	<1.0	3.9	1.6	1.3	1.6

Sample Location:	SG-N8	SG-N9	SG-N10	SG-N11	SG-N12	SG-N13	SG-N14	SG-N15
Date:		1/6/95	1/6/95	1/6/95	1/6/95			1/11/95
Probe Depth:		15	15	15	15			15
COMPOUND								
1,1-DCE	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0
PCE	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0
Acetone	4.5	<1.0	0.7J	1.7	6.6			2.5
MEK	4.9	<1.0	<1.0	0.95J	1.2			1.8

Sample Location:	SG-O8	SG-O9	SG-O10	SG-O11	SG-O12	SG-O13	SG-O14	SG-O15
Date:	1/5/95	1/6/95	1/6/95	1/6/95	1/6/95	1/6/95	1/6/95	1/6/95
Probe Depth:	15	15	15	15	15	15	15	15
COMPOUND								
1,1-DCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acetone	6.4	<1.0	0.7J	<1.0	2.8	1.0	1.2	3.0
MEK	4.9	<1.0	<1.0	<1.0	2.4	<1.0	<1.0	0.5J

Sample Location:	SG-O11D
Date:	1/6/95
Probe Depth:	15
COMPOUND	Duplicate
1,1-DCE	<1.0
1,1,1-TCA	<1.0
PCE	<1.0
Benzene	<1.0
Toluene	<1.0
Acetone	1.9
MEK	<1.0

TABLE 9(continued)

900 SERIES BUILDING AREA
BMO/DETACHMENT 10 AREA
ON-SITE LABORATORY
SOIL GAS RESULTS (µg/L)

Sample Location:	SG-P11	SG-P12	SG-P13	SG-P14	SG-P15
Date:	1/9/95	1/9/95	1/9/95	1/9/95	
Probe Depth:	15	15	15	15	
COMPOUND					
1,1-DCE	<1.0	<1.0	<1.0	<1.0	NS
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0	
PCE	<1.0	<1.0	<1.0	<1.0	
Benzene	<1.0	<1.0	<1.0	<1.0	
Toluene	<1.0	<1.0	<1.0	<1.0	
Acetone	1.0	0.8J	0.72J	1.0	
MEK	1.1	1.1	0.9J	1.0	

Sample Location:	SG-Q11	SG-Q12	SG-Q13	SG-Q14	SG-Q15
Date:		1/9/95	1/9/95	1/9/95	1/9/95
Probe Depth:		15	15	15	15
COMPOUND					
1,1-DCE	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0
Acetone	0.5J	0.64J	1.0	<1.0	0.63J
MEK	<1.0	1.1	1.0	0.99J	1.2

Sample Location:	SG-Q14D
Date:	1/9/95
Probe Depth:	15
COMPOUND	
1,1-DCE	Duplicate
1,1,1-TCA	<1.0
PCE	<1.0
Benzene	<1.0
Toluene	<1.0
Acetone	<1.0
MEK	0.54J
	1.2

TABLE 9(continued)

900 SERIES BUILDING AREA
BMO/DETACHMENT 10 AREA
ON-SITE LABORATORY
SOIL GAS RESULTS (µg/L)

Sample Location:	SG-R11	SG-R12	SG-R13	SG-R14	SG-R15
Date:	2/2/95	2/10/95	1/9/95	1/9/95	2/1/95
Probe Depth:	15	15	15	15	15
COMPOUND					
1,1-DCE	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0
Acetone	<1.0	<1.0	1.4	1.1	1.5
MEK	<1.0	<1.0	1.1	0.98J	<1.0

Sample Location:	SG-R15D
Date:	2/1/95
Probe Depth:	15
COMPOUND	Duplicate
1,1-DCE	<1.0
1,1,1-TCA	<1.0
PCE	<1.0
Benzene	<1.0
Toluene	<1.0
Acetone	<1.0
MEK	<1.0

Sample Location:	SG-WP1	SG-WP2	SG-WP3	SG-WP4
Date:	2/1/95	2/1/95	2/1/95	2/1/95
Probe Depth:	15	15	15	15
COMPOUND				
1,1-DCE	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0
Acetone	2.9	11	1.1	2.5
MEK	1.5	3.8	<1.0	0.66J

Sample Location:	SG950-001	SG950-002	SG950-003	SG950-004
Date:	1/24/95	1/24/95	1/23/95	1/23/95
Probe Depth:	15	15	15	15
COMPOUND				
1,1 Dichloroethene	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<1.0	<1.0
PCE	<1.0	<1.0	<1.0	<1.0
Benzene	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0
Acetone	2.3	1.3	1.7	2.5
Methyl Ethyl Ketone	1.0	0.78J	1.0	1.8

Freon 113 mis-identified as 1,1-DCE due to retention time overlap.
B: Equipment blank contained target analyte above PQL
J: Indicates value is an estimate due to concentration below the PQL
NS: Not Sampled
1,1-DCE: Dichloroethene
TCA: Trichloroethane
PCE: Tetrachloroethene
MEK: Methyl Ethyl Ketone

Table updated by M. Davis on 5/6/95

1,1,1-Trichloroethane (1,1,1-TCA) was detected at five different points in the area of Building 939 (Fig. 6) at concentrations ranging between 0.55J[1] µg/L and 6.2 µg/L. Approximately 100 ft from the location of the second highest reported concentration of 1,1,1-TCA (sample point L-10, 5.5 µg/L), a second soil-gas sample was collected at 30 ft below ground surface. The concentration of the second sample (SG-KL-10) was 6.2 µg/L. Freon 113 (mis-identified as 1,1-DCE, see Sect. 1.4) was reported in 15 samples at concentrations ranging between 0.40J µg/L and 9.8 µg/L. Acetone and MEK were detected in laboratory equipment blanks.

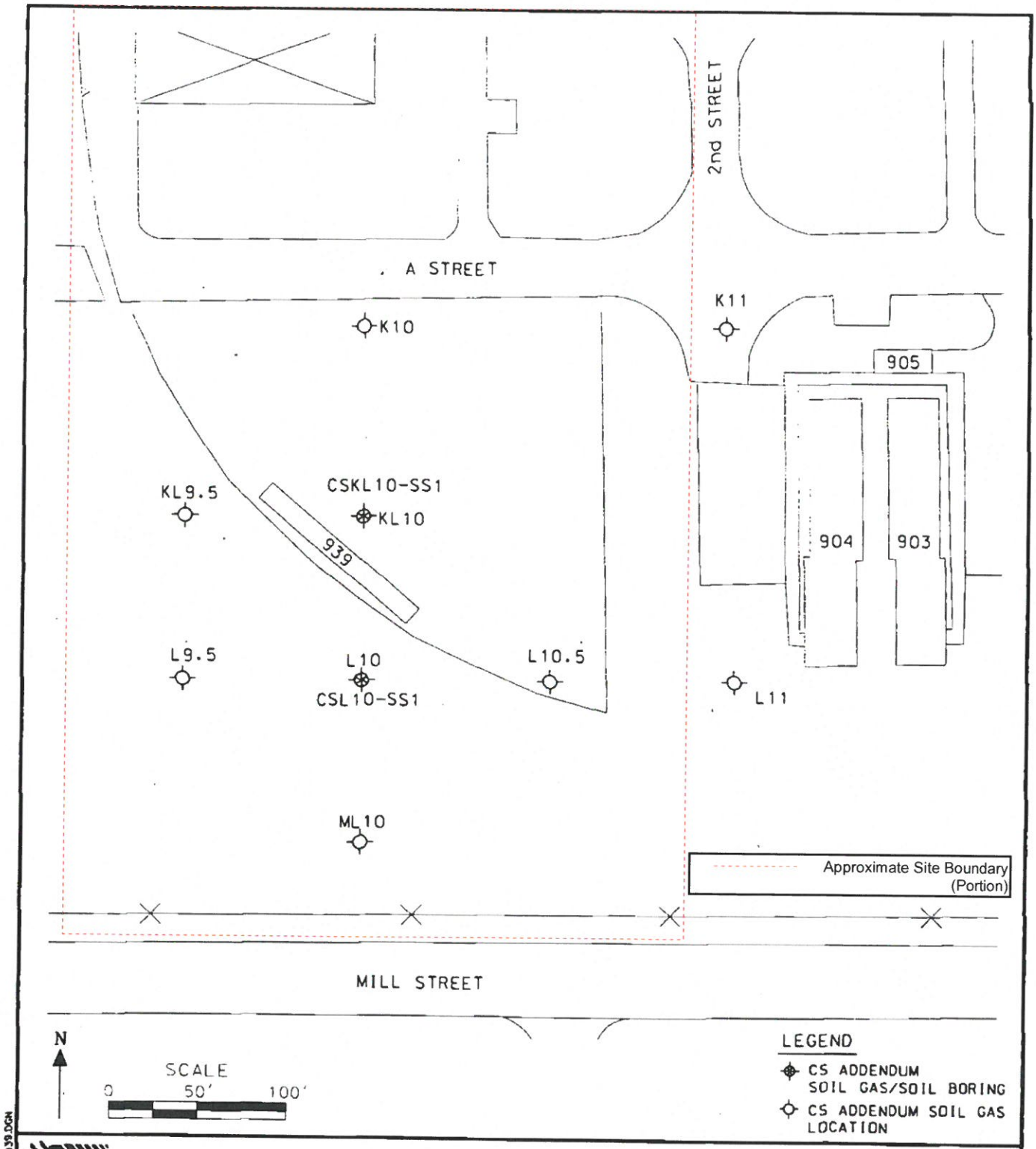
Two soil borings (CSL10-SS1 and CSKL10-SS1) were drilled in the area of Building 939 at the locations (SG-L-10, SG-KL-10) where soil-gas sample results exhibited the highest concentrations of 1,1,1-TCA (Fig. 6). Samples were collected and analyzed from 0 to 1.5 ft bgs and 40 to 41.5 ft bgs intervals of each of the borings. Subsurface soil samples were analyzed for VOCs, SVOCs, PPL metals, and PCBs. There were no VOC COCs detected in the samples, except for laboratory contaminants. Semivolatile compounds were not identified at levels above their quantification limits. Seven SVOC Tentatively Identified Compounds (TICs)[2] were reported at concentrations ranging from 72J to 350JB[3] µg/kg at 0 to 1.5 ft bgs of boring CSL10-SS1. The laboratory did not have a library match for these TICs. Nineteen TICs were reported at concentrations ranging from 80J to 1,400J µg/kg at 40 to 41.5 ft bgs for this same boring (CSL10-SS1). Four TICs were reported at concentrations ranging from 130J to 400JB µg/kg at 0 to 1.5 ft bgs of boring CSKL10-SS1. Nineteen TICs were reported at concentrations ranging from 72J to 700JB µg/kg at 40 to 41.5 ft bgs of this boring (CSKL10-SS1). 2-Pentadecanone was the only TIC identified by the laboratory.

---

[1] The "J" qualifier indicates that the value is an estimate either due to the concentration near the quantitation limit or due to compound interference.

[2] In addition to the chemicals listed in Tables 4 and 5, the laboratory is required to report the presence of other chemicals detected, which are called tentatively identified compounds or TICs. The laboratory is required to perform a library match using the retention time to provide a possible name for the chemical. If no retention time match is determined, the laboratory only provides the retention time value.

[3] The "B" qualifier denotes that the compound was identified in laboratory blanks.



CDM FEDERAL PROGRAMS CORPORATION
a subsidiary of Camp Dresser & McKee Inc.

900 SERIES BUILDINGS
939 BUILDING AREA

Figure 6

Subsurface soils did not contain metals above background concentration levels established for soils at Norton AFB. Subsurface soil samples collected at these borings did not contain detectable levels of PCBs.

2.2.3 *900 Series Buildings Recommendations*

Based on the low levels of contaminants detected, additional investigation of this area is not warranted.

2.3 AOC 47 - DETACHMENT 10/BALLISTIC MISSILE ORGANIZATION (BMO)

2.3.1 *Facility Description*

The Detachment 10/BMO area is located south of the 900 Series Buildings along the southern base boundary and adjacent to Tippecanoe Ave. (Fig. 3). Features of the southern portion of the BMO complex are shown on Fig. 7. The buildings that comprise the BMO complex were built in the 1950s. As part of the original plans for closure of Norton AFB, BMO was to remain active. However, in 1990 plans for BMO changed and it is now scheduled for relocation outside of California in this current fiscal year. The Defense Finance and Accounting Agency will be occupying the buildings of this area upon the departure of BMO.

The BMO property was originally part of Norton AFB, but was transferred to the County of San Bernardino in 1974. San Bernardino County used the property to house a variety of county agencies including Data Processing, Central Planning, Schools Administration, Office Management, and Environmental Services. In 1982 the Air Force re-acquired the property.

In 1992 a 10,000-gal underground storage tank (UST) was removed from an area just west of Building 950 (Fig. 8). A tank removal closure report (AEC, 1992) was completed for this activity. There were no fuel compounds detected in two soil samples collected at this location.

2427

File: 17G
T.B.

NORTON AFB
CALIFORNIA

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 2427

Gary Junsworth

File:
T.B. 17A-61

#2427

Former Norton Air Force Base
Operable Unit Number 2
Proposed Plan

BCT Review Draft
No. 1

October 10, 1997

Norton Operating Location
AFBCA/DD Norton
305 South Tippecanoe Ave.
San Bernardino, CA 92408

CONTENTS OF THE PROPOSED PLAN

Section **Page**

Opportunities for Public Involvement 1
Community Meeting 1
Site Background 3
Scope and Role of Operable Unit No. 2 3
Site/AOC Investigation and Cleanup Process 5
Summary of Cleanup Standards 23
Assessment of Health Risks 23
Ecological Risk Assessment 26
Evaluation of Cleanup Methods 26
Selected Cleanup Alternatives and Removal Actions 27
Post-Remedial Action Risks 30
Operable Unit 2 Proposed Plan Summary and Conclusions 35
Definitions of Key Terms Used in the Proposed Plan 36
Abbreviations used in the Proposed Plan 38
Bibliography 39
For More Information 43
Information Repository 43
Restoration Advisory Board 43

FIGURES IN PROPOSED PLAN

Figures

Figure 1 Location of Operable Units Norton Air Force Base 2
Figure 2 Location of IRP Sites and AOCs OU2 Area, Norton Air Force Base 4
Figure 3 Location of Other Environmental Investigation and Cleanup Activities within the OU2 Area, Norton Air Force Base 6

TABLES IN PROPOSED PLAN

Tables

Table 1 Description of Sites Comprising Operable Unit Number 2 7
Table 2 Other Environmental Cleanup Actions within the Area of OU2 19
Table 3 Soil Cleanup Standards for Norton Air AFB 24
Table 4 Pre-Remedial Action Comparison of Exposure Point Concentrations with Soil Cleanup Standards for IRP Sites and AOCs within OU2 25
Table 5 Comparison of Post-Remedial Action Soil Contamination Levels with Norton AFB Soil Cleanup Standards 31
Table 6 Residual Chemical Risks for OU2 Area Sites and AOCs 33

FORMER NORTON AIR FORCE BASE OPERABLE UNIT NUMBER 2 PROPOSED PLAN (BCT REVIEW DRAFT)

2427 4

Air Force Base Conversion Agency, Norton Operating Location, San Bernardino, CA October 1997

The U.S. Air Force, as the lead agency for the environmental investigation and cleanup of the former Norton Air Force Base (AFB), along with the U.S. Environmental Protection Agency (USEPA) and the California Environmental Protection Agency (Cal-EPA), announce the completion of the environmental investigation and cleanup of the Operable Unit (OU) No. 2 (OU2) area of Norton AFB. The Air Force, USEPA, and Cal-EPA are seeking public comment on the completion of the environmental work, as described in this Proposed Plan.

OU2 represents the western one-third portion of Norton AFB, west and north of the airfield (Figure 1). The OU2 area represents the most developed portion of Norton AFB, where the majority of the base's housing, warehouses, offices, recreational facilities, and industrial facilities occurred. The use, storage, and/or disposal of chemicals (e.g., solvents and paints) and fuels over the 40-year history of Norton AFB resulted in several locations within the OU2 area becoming contaminated. Locations within OU2 with sufficient chemical contamination that posed a threat to human health, groundwater resources, and the environment have been investigated and cleaned up. This Proposed Plan summarizes the environmental investigations, remedy evaluations, and cleanup work performed by the Air Force and its consultants.

The purpose of this Proposed Plan is to seek public involvement (input, questions, and comments) on the Air Force's efforts within the OU2 area of the former Norton AFB. This Proposed Plan is the first step in the delisting of contaminated sites as described in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the federal law that directs cleanup of chemically contaminated sites. Section 117 of CERCLA requires public involvement in decisions related to the cleanup and closure of sites. To assist the public in its review, the Air Force has summarized in this Proposed Plan the environmental cleanup activities performed for the OU2 area.

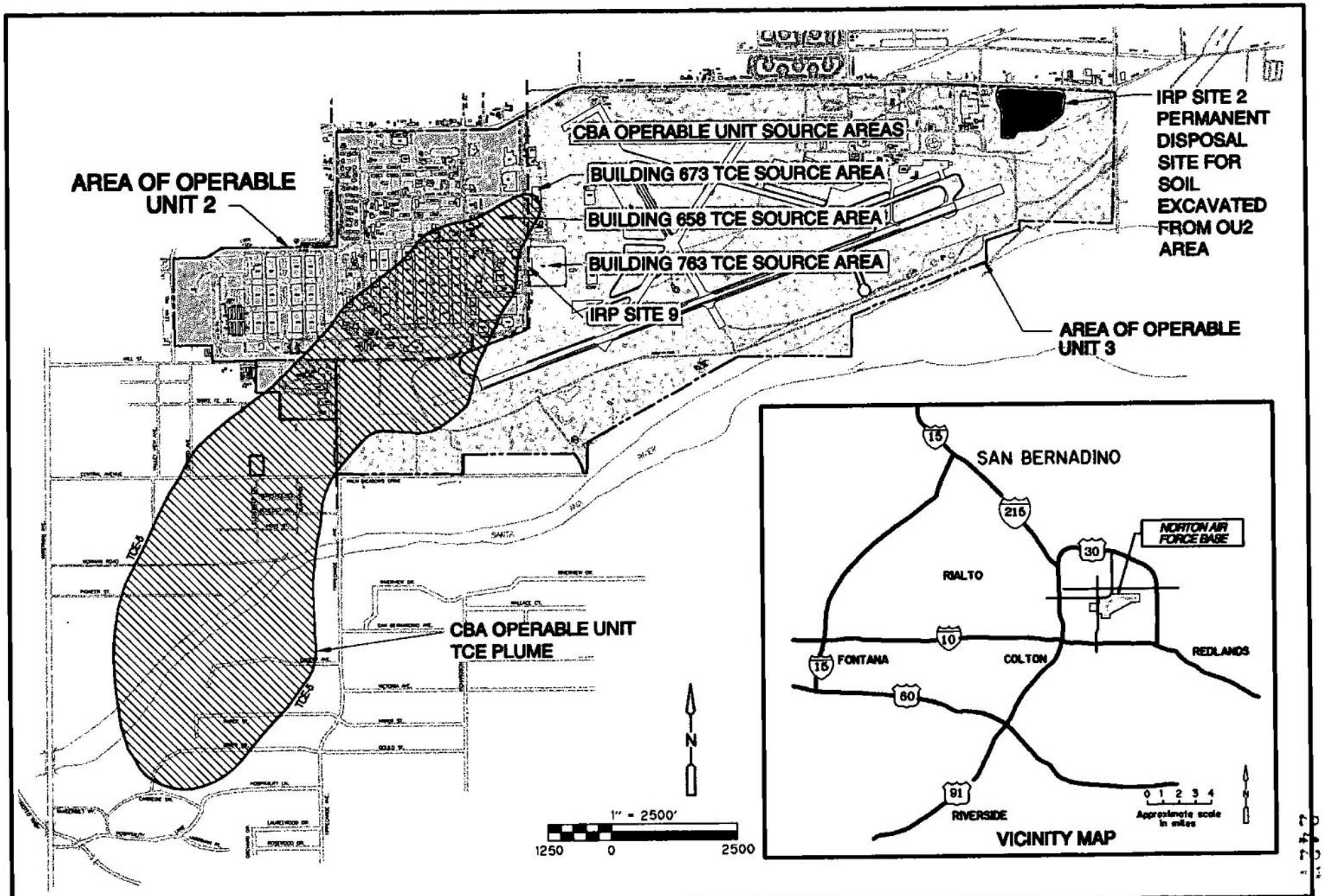
The OU2 area has been subject to more than 20 separate environmental investigations resulting in numerous cleanup actions. The environmental work has been described in over 40 environmental documents, a listing of which is included as the Bibliography section of this Proposed Plan. The documents are also identified in the text of the Proposed Plan and are cross referenced to the Bibliography with a reference number (e.g., Ref. 1). All documents are available in the Norton AFB Information Repository located at the Norman Feldhym Central Library, California Room, 555 West 6th Street, San Bernardino, CA, 92410.

OPPORTUNITIES FOR PUBLIC INVOLVEMENT
PUBLIC COMMENT PERIOD JANUARY 1 THROUGH JANUARY 31, 1998

During the public comment period, you are encouraged to comment on the Proposed Plan. Comments may be submitted either orally or in writing at the community meeting. Written comments can also be sent to the Air Force at AFBCA/DD Norton, 305 South Tippecanoe Ave., San Bernardino, CA 92408. To receive full consideration, all comments must be received by January 31, 1998.

COMMUNITY MEETING

You are invited to attend and participate in the community meeting on the OU2 Proposed Plan. During the meeting Air Force representatives will describe cleanup and investigation activities performed within the OU2 area and will be available to answer community questions on the cleanup efforts. The community meeting will be held at the San Bernardino City Council Chambers, 123 D Street, San Bernardino, at 7 PM on January 14, 1998.



CDM Federal Programs Corporation
A Subsidiary of Camp Dresser & McKee Inc.

LOCATION OF OPERABLE UNITS
NORTON AIR FORCE BASE

Figure 1

SITE BACKGROUND

The former Norton AFB is located in the City of San Bernardino, California, 55 miles east of Los Angeles and 50 miles west of Palm Springs. The base consisted of approximately 2,000 acres, two-thirds of which comprised an airfield and one-third comprised support areas for military activities (Figure 1). The base was activated in March 1942 and primarily served as an aircraft repair center for the Air Force. In its later years of operation, Norton AFB also served as a military airlift wing providing transport of military supplies to military bases worldwide. Norton AFB was identified for closure in 1988 and was officially closed in March 1994. The *Environmental Impact Statement for Disposal and Reuse of Norton AFB*, California (Ref. 1) presents an evaluation of the proposed reuses of the base.

OU2 comprises the western one-third of the Norton AFB. OU2 represents the most developed (urbanized) portion of the base. The OU2 area included a gridded network of surface streets, numerous buildings, lawns, and recreational facilities. Included was base housing, base offices, engineering yards, warehouses, and industrial (aircraft maintenance and refurbishing) facilities. Essentially the entire surface area of OU2 was used for military support and training activities (Figure 2).

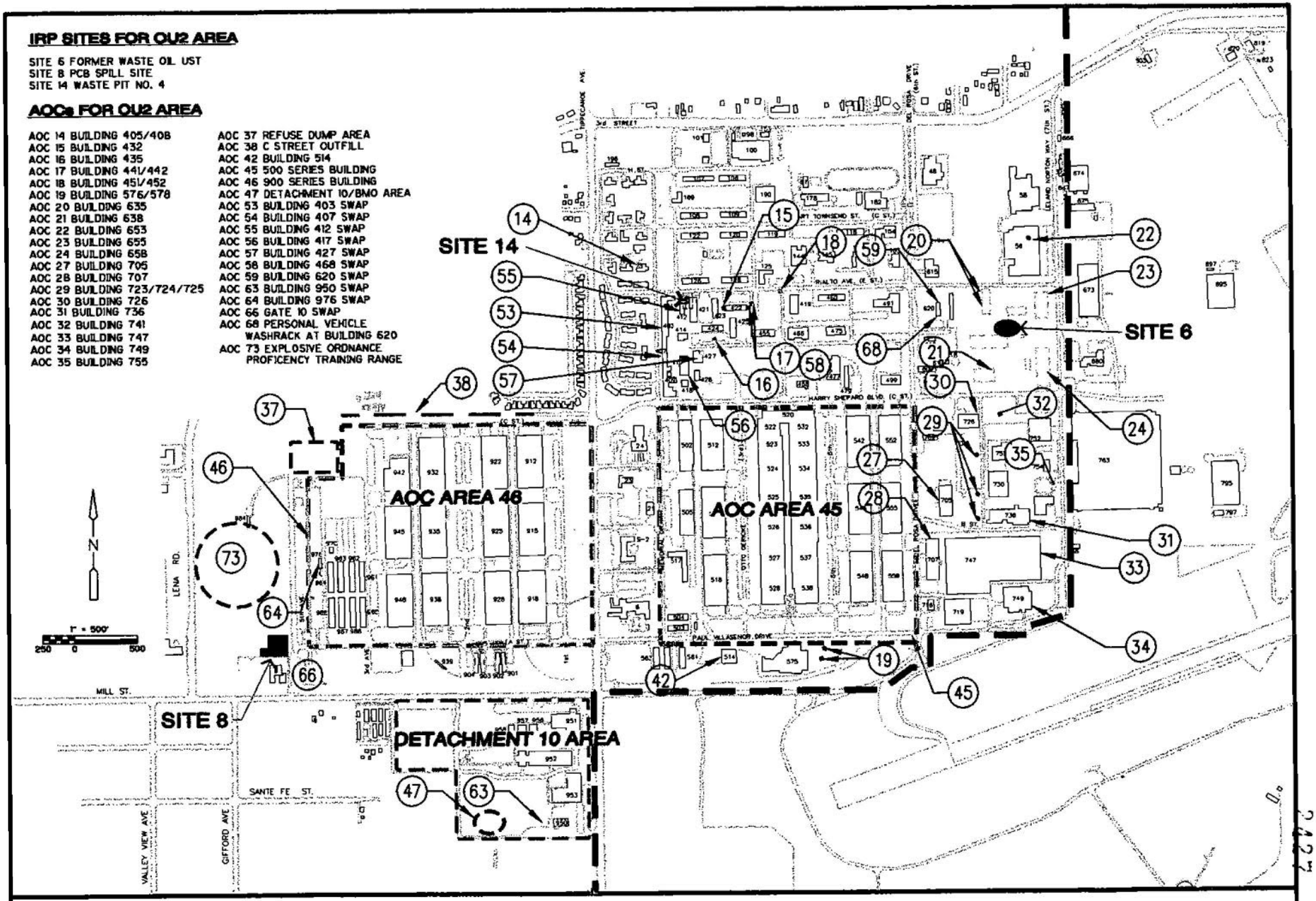
Environmental investigation of chemical and waste handling and disposal practices were initiated in 1982 under the Air Force's Installation Restoration Program (IRP). A 1982 records search (Ref. 2), reflecting the first assessment of chemical waste disposal at Norton AFB, identified 20 locations with suspected contamination. These 20 locations were identified as IRP sites. These 20 sites, plus two additional sites identified during the 1984 to 1986 IRP (Refs. 3 and 4), comprised the 22 Norton IRP sites. Three of the 22 sites (sites 6, 8, and 14) are located in the area of OU2. In 1987 Norton AFB was placed on the USEPA's National Priorities List (NPL) of hazardous waste sites due to the presence of the solvent trichloroethylene (TCE) in groundwater beneath the base. This required the Air Force to conform to the process outlined in the National Oil and Hazardous Substances Contingency Plan (NCP) for hazardous waste site cleanup (Ref. 5). To facilitate the review and approval of environmental investigations and cleanup of the base, the Air Force entered into a Federal Facilities Agreement (FFA) with the USEPA and the State of California in 1989. Since 1989, representatives from USEPA Region 9, the California Department of Toxic Substances Control, and the California Regional Water Quality Control Board have met with the Air Force almost on a monthly basis to review and discuss progress of the environmental cleanup.

This Proposed Plan summarizes the investigation and cleanup activities for the IRP sites and other chemical use, storage, and disposal areas located within the boundaries of OU2. Included in the Proposed Plan are the soil cleanup values and remedial action alternatives considered for contaminated sites, along with descriptions of the cleanup activities performed at the identified sites.

SCOPE AND ROLE OF OPERABLE UNIT No. 2

The cleanup of a CERCLA site such as Norton AFB is typically subdivided into distinct activities (or units) based on an evaluation of the locations of contaminated areas, type of media contaminated (e.g., soil, groundwater), and/or the urgency for cleanup. Each distinct activity is called an operable unit and each OU is subject to the CERCLA/NCP cleanup process independently from the other OUs.

OU2 is defined as soil contaminated sites found in the western third of the base. This includes all areas west of the airfield to the western base boundary, and all areas north of the airfield and Mill Street to the northern base boundary (Figure 1). OU2 includes three IRP sites and 38 areas of concern (or AOCs). Figure 2 lists and shows the locations of the IRP sites and AOCs within OU2. An AOC is defined as any base location with a history of chemical use, but with no record of chemical disposal. By contrast, the IRP sites are locations where chemical waste storage and/or disposal activities were reported to have occurred.



CDM Federal Programs Corporation
A Subsidiary of Camp Dresser & McKee Inc.

LOCATION OF IRP SITES AND AOCs
OU2 AREA
NORTON AIR FORCE BASE

Figure 2

OU2 is one of three OUs established for Norton AFB. The first OU addressed the Central Base Area (CBA) TCE groundwater plume and TCE soil sources (Buildings 658, 673, and 763, and IRP site 9) that had contributed to the plume (Figure 1). The CBA OU Proposed Plan (Ref. 6) was released in February 1993 for a 30 day comment period and the community meeting was held on March 11, 1993. The Record of Decision (ROD) for the TCE groundwater plume remedy was signed on November 24, 1993 (Ref. 7). The Air Force has fully implemented the CBA OU remedy through installation of two groundwater pump and treatment systems to control and treat the TCE groundwater plume, and through the installation and operation of an extensive network of soil vapor extraction wells to remove and treat solvents present in soils in the TCE source areas.

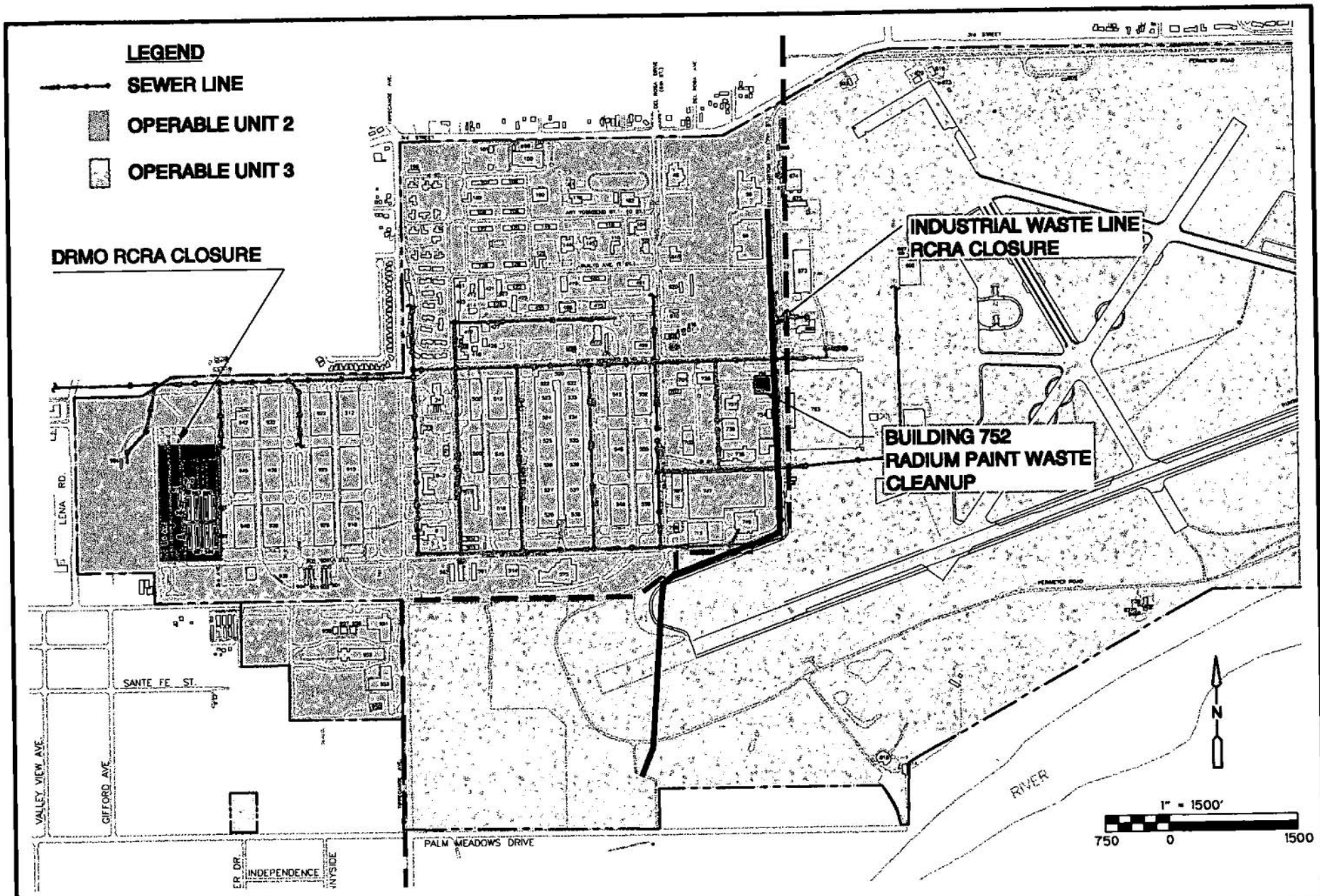
Operable Unit No. 3 is defined as soil contaminated sites found in the eastern two-thirds of the base, which includes much of the airfield. OU3 consists of 18 IRP sites and 35 AOCs. A Proposed Plan and ROD for OU3 will be available for public comment during the summer of 1998.

Table 1 summarizes the chemical use activities, chemical contaminants, actions taken, and current environmental status of the three IRP sites and 38 AOCs located within the boundaries of OU2. Figure 2 shows the location of the IRP sites and AOCs within OU2.

In addition to the investigation and cleanup of IRP sites and AOCs in the area of OU2, several other environmental actions were taken by the Air Force. These actions include removal of underground storage tanks (USTs), closure of the Defense Reutilization and Marketing Office (DRMO) facility, the Building 752 radionuclide cleanup, and closure of the industrial waste line. Figure 3 shows the locations of key facilities subject to the non-CERCLA investigations. Environmental activities not related to the CERCLA investigations performed within the OU2 area are summarized in Table 2.

SITE/AOC INVESTIGATION AND CLEANUP PROCESS

The process used by the Air Force to investigate and clean up contaminated sites within the OU2 area paralleled the process developed by USEPA and described in the NCP (Ref. 5). The NCP provides for a multiple-step and multiple-phased process for site characterization and cleanup. The first step is termed a preliminary assessment which essentially involves interviews of base personnel and a review of records of where chemicals were used, treated, and disposed. The second step is a site assessment (also termed a confirmation study) during which environmental samples (e.g., soil, soil gas, air, groundwater, and/or surface water samples) are collected to determine whether a release of chemicals has actually occurred. If the preliminary assessment/site investigation identifies contamination, then the scope of the investigation is expanded into a study termed a remedial investigation (RI) and also termed an expanded source investigation (ESI). During the RI, the nature (reflecting the types of chemicals present and their concentrations) and extent (the area/volume of soil or groundwater affected) of environmental contamination is determined. A risk assessment is performed using the RI data to determine whether the environmental contamination presents an adverse risk to human health or the environment. If the results of the RI and risk assessment determine that an adverse risk does exist, then a feasibility study (FS) is performed. The FS evaluates technical options for cleaning up the site and reducing the risk. Cleanup criteria are based on the results of the risk assessment and regulatory standards also termed applicable or relevant and appropriate requirements (ARARs). The technical options are compared with nine selection criteria (including environmental protection, short- and long-term effectiveness, implementability, compliance with laws, cost and State/community acceptance) to identify the optimal cleanup alternative for the contamination. The preferred alternative is then presented in a Proposed Plan for community review and comment. Following community comment, the selected alternative is then incorporated into a legal document termed a ROD. An alternative to the RI/FS/ROD decision process is the use of an Engineering Evaluation/Cost Analysis (EE/CA) to develop and select a remedial action. The EE/CA is a report that represents a focused FS. It is used for non-time critical removal actions and is prepared for public and State comment. Concurrence by the Air Force, USEPA, and State of the selected remedy is presented in an Action Memorandum, the document formalizing the decision, when the remedy is identified through an EE/CA.



CDM Federal Programs Corporation
A Subsidiary of Camp Dresser & McKee Inc.

LOCATION OF OTHER ENVIROMENTAL INVESTIGATION AND CLEANUP ACTIVITIES WITHIN THE OU2 AREA NORTON AIR FORCE BASE

Figure 3

TABLE 1
DESCRIPTION OF SITES COMPRISING OPERABLE UNIT NUMBER 2

Site Name	Site Description	Site Activities and Conclusions	References
IRP Site 6 - Former Underground Waste Oil Tank	Site 6 was the location of six underground tanks (USTs) used for fuel storage. It was also reported that the tanks were used for waste product storage. The tanks were removed by 1982 and the site converted to a military vehicle service station.	Fuel chemicals were detected in soil samples collected at this site. Because site 6 was adjacent to the Building 647 UST site, cleanup of the site was performed under the basewide UST program. A total of 6,000 cu yd of petroleum-contaminated soil was excavated from site 6 and the adjacent Building 647 site. The site has been regraded to become a portion of the parking lot for the San Bernardino International Airport.	2, 3, 4, 8, 9, 10, 11
IRP Site 8 - PCB Spill Area	Site 8 was a 1.5-acre yard once used for the storage of transformers and drums containing PCB fluids. In May 1982, a spill of approximately 20 to 30 gallons of fluids resulted in the excavation and removal of 600 cubic yards (cu yd) of soil.	Site investigated during the 1984 to 1986 IRP, and again during the 1992-1994 RI, determined that PCBs remained above human health protective standards. Site evaluation was performed under an EE/CA and documented in an Action Memorandum. Site cleanup was performed under a soil removal (1,553 cu yd removed) completed in November 1996.	2, 3, 4, 8, 9, 12, 13, 14
IRP Site 14 - Waste Pit No. 4	Site 14 was located in the Civil Engineering compound adjacent to Building 412. It was the location of two pits used for the disposal of waste paints and thinners. The pits were filled with gravel with the gravel periodically removed and replaced. Use of the pits had ceased by 1986.	The site was not investigated during the 1984 to 1986 IRP. Soil samples collected during the 1992 to 1994 RI indicated the presence of paint wastes. Although the results of the risk assessment show no significant health threat due to the depth contamination was buried, the recommendation was made for a cosmetic cleanup. Site cleanup options were assessed under an EE/CA and documented in an Action Memorandum. Approximately 535 cu yd of soil were excavated in the removal action.	2, 3, 4, 8, 9, 15, 16, 17
AOC 14 - Building 405/408	Building 405 was a gasoline storage facility and Building 408 was a motor pool shed during the 1950s and 1960s before the location of the buildings was redeveloped as officer's housing. There is a 1967 record of a UST associated with the site, but no record of UST removal.	Soil gas surveys were conducted to identify fuel chemicals; none were detected. A ground-penetrating radar survey was conducted to locate any remaining UST and a subsurface anomaly was reported. The location of the anomaly was excavated. The anomaly was found to be an 8-ft-long, 4-in.-diameter cast iron	18, 19, 20

TABLE 1 (continued)
DESCRIPTION OF SITES COMPRISING OPERABLE UNIT NUMBER 2

Site Name	Site Description	Site Activities and Conclusions	References
AOC 14 - Building 405/408 (cont.)		pipe and a 4 in. diameter plastic pipe. Both pipes had been filled with concrete. No UST was found at the site of the AOC and because no soil contamination was detected, no further action was warranted.	18, 19, 20
AOC 15 - Building 432	Building 432 was the site of an automotive maintenance facility constructed in 1942 and removed in the late 1960s before being paved as a dormitory parking lot. The concern of the AOC was residual automotive wastes in soils.	The AOC was investigated through the collection of seven soil gas and a soil sample. Extremely low (less than 1 μg/L) fuel and solvent chemicals were reported for one soil gas sample. No fuel or solvent chemicals were detected in the soil sample. The Confirmation Study (CS) determined that no significant soil contamination remains and recommended no further action.	18, 19
AOC 16 - Building 435	Building 435 was the site of an engine testing and automotive maintenance facility constructed in 1942 and removed by the early 1970s before being paved as a dormitory parking lot. The concern for the AOC was residual automotive wastes.	The AOC was investigated through the collection of six soil gas samples. No fuel or solvent chemicals were detected in the six samples and no further investigation of the AOC was warranted.	18, 19
AOC 17 - Building 441/442	Buildings 441 and 442 were former vehicle and equipment washrack facilities constructed in 1942 and removed by the early 1970s before being paved for a dormitory parking lot and driveway. The concern for the AOC was residual vehicle wastes.	The AOC was investigated through the collection of ten soil gas samples. No fuel or solvent chemicals were detected and no further investigation of the AOC was warranted.	18, 19
AOC 18 - Building 451/452	Buildings 451 and 452 were a former garage, gasoline, and oil station that included two USTs. The facility was constructed in 1942 and removed after 1967 to become a parking lot and driveway. There were no records of the USTs being removed. The concern for the AOC was the presence of the USTs and fuel chemicals in soil.	During the CS, a GPR survey was performed to locate the USTs. The GPR results indicated that the USTs had been removed. Low levels (less than 1 micro grams per liter [μg/L]) of fuel chemicals were reported for one of 10 soil gas samples analyzed for the AOC. Fuel chemicals were identified in a soil sample. Additional sampling was performed under the ESI when the	18, 19, 21, 22, 23

TABLE 1 (continued)
DESCRIPTION OF SITES COMPRISING OPERABLE UNIT NUMBER 2

Site Name	Site Description	Site Activities and Conclusions	References
AOC 18 - Building 451/452 (cont.)		extent of subsurface soil contamination by fuels was determined. The need for a removal action was assessed in an EE/CA and the decision to identify the site in a deed restriction was documented in an Action Memorandum. This decision was based on the relatively low concentrations of fuel-related contaminants, and the presence of pavement above the site and the proposed long-term land use as commercial.	18, 19, 21, 22, 23
AOC 19 - Building 576/578	Buildings 576 and 578 were a former automotive repair shop and washrack in operation from 1943 through the late 1960s. Only the concrete foundations of the buildings remained. The concern for the AOC was the presence of automotive repair waste chemicals in soil.	During the CS, seven soil gas samples were collected and one soil sample analyzed for fuel and solvent chemicals. One of the soil gas samples contained low (less than 1 μg/L) levels of fuel chemicals. The soil sample did not contain detectable fuel chemicals. Based on the results, no further action was recommended for AOC 19.	18, 19
AOC 20 - Building 635	Building 635 was a chemical and salvage warehouse that stored flammable and inflammable chemicals, poisons, and acids from 1942 to 1968. In 1968 one-half of the building was converted to vehicle maintenance and the other half to offices. The concern for the AOC was the presence of chemicals from the time it was used for chemical storage and for the presence of automotive repair chemical waste in soil.	During the CS, 14 soil gas samples were analyzed and three soil samples collected. Fuel and solvent chemicals were reported at low levels (less than 1 μg/L) in one of the soil gas samples. The solvent TCE was report at 8 μg/kg in one soil sample. Based on the results, no further action was recommend for AOC 20.	18, 19
AOC 21 - Building 638	Building 638 housed a radio repair shop, electronics shop, and armament repair shop. Constructed in 1942, it was occupied by the communications squadron at the time of base closure. Because the building contained a paint spray booth, the concern for the AOC was waste paint, PCBs, and solvents used to clean electronics.	No solvent chemicals were reported for the five soil samples analyzed during the CS. No PCBs, solvent, or paint chemicals were reported for the two soil samples collected at the AOC. Based on the results, no further action was recommended for AOC 21.	18, 19

TABLE 1 (continued)
DESCRIPTION OF SITES COMPRISING OPERABLE UNIT NUMBER 2

Site Name	Site Description	Site Activities and Conclusions	References
AOC 22 - Building 653	Building 653 housed a fueling system that stored No. 1 aircraft gasoline. The building was constructed in 1942 and its associated USTs were removed in the early 1980s. The concern for the AOC was the presence of fuel chemicals in soil.	Ten soil gas samples were analyzed during the CS. Only one of the 10 samples reported fuel chemicals at about 1 μg/L in concentration, with solvent chemicals detected at less than 1 μg/L. Based on the results, no further action was recommended for AOC 22.	18, 19
AOC 23 - Building 655	Building 655 housed an aircraft reclamation facility and repair shop depot from 1942 to the late 1960s. Chemical use and disposal activities were reported for this building. The concern for the AOC was the presence of solvents in soil.	Eleven soil gas samples were analyzed and four soil borings drilled during the CS. The solvent TCE was detected in nine of the eleven samples at concentrations between 1 and 20 μg/L. Fuel chemicals were reported for one soil sample. Based on these findings, additional investigation of this AOC was performed under the ESI. A total of 37 additional soil gas samples were analyzed, with the maximum TCE concentration reported at 40 μg/L found underneath the central portion of the building. Eleven soil borings were drilled, but TCE was only found in two samples at a maximum of 5 micro grams per kilogram (μg/kg). Based on the low concentrations in the sample results, no further action was recommended for AOC 23.	18, 19, 21
AOC 24 - Building 658	Building 658 was used as an equipment maintenance facility from 1942 to the 1960s, and then for storage, offices, and the base's printing and reproduction operations until the time of base closure. A sump in the northern portion of the building was identified as a TCE source location during the CBA TCE source investigation. Because chemical use was known for the building, the concern for the AOC was the removal of TCE-contaminated soils and the identification of TCE in soil beneath the southern half of the building.	As part of the TCE source removal action, a sump and 350 cu yds of TCE-contaminated soil immediately north of Building 658 were excavated in 1995. During the CS, TCE was detected in 7 of 15 soil gas samples, at a maximum of 6 μg/L. TCE was not detected in any of 5 soil samples. Based on the soil gas results, the study concluded that the source of TCE in soil gas had been remediated as part of the sump removal and that no further investigation of the building was warranted.	6, 7, 18, 19, 24, 25

TABLE 1 (continued)
DESCRIPTION OF SITES COMPRISING OPERABLE UNIT NUMBER 2

Site Name	Site Description	Site Activities and Conclusions	References
AOC 27 - Building 705	Building 705 was used as an engine processing facility from the 1940s to the mid-1960s when it was converted to a motor pool storage facility. Significant chemical use in the repair of aircraft engines was reported for the facility. The concern for the AOC was solvent and fuel wastes remaining in soil.	During the CS, 19 soil gas samples were collected at the location. Solvent and fuel chemicals were not detected in any of the samples. Based on the results, the CS recommended no further evaluation of this AOC.	18, 19
AOC 28 - Building 707	Building 707 was used as a rubber reclamation and repair facility from 1944 to the mid-1960s and then as a printing and publications operation until base closure. Base records indicate significant chemical use including solvents, TCE, oil, and carbon removers for the building. The concern for the AOC was the presence of solvents in soil.	During the CS, TCE was reported in 3 of 4 soil gas samples at a maximum concentration of 1 μg/L. TCE was not detected in subsurface soil samples, but fuel related chemicals were. Additional investigation of Building 707 was performed during the ESI, but no significant contamination was reported. The recommendation of the ESI was for no further evaluation of the building.	18, 19, 21
AOC 29 - Building 723/724/725	Building 723 was an engine testing facility from the early 1942 to the early 1980s. It was connected via pipelines to Buildings 724 and 725 which housed large USTs containing fuels. The concern for the AOC was to determine whether the USTs were present and had impacted soil due to fuel leakage.	During the CS, a GPR survey determined that the USTs had been removed. Eleven soil gas samples were analyzed for the location of Buildings 724 and 725. Fuel chemicals were not detected in any of the samples. Eleven soil gas samples were analyzed for the Building 723 area. Ten of the samples reported fuel chemicals, but at a maximum concentration of 1 μg/L. Additional soil gas and soil boring work was performed during the ESI. No significant fuel contamination was reported, and the ESI recommended no further action for this AOC.	18, 19, 21
AOC 30 - Building 726	Building 726 was used as an engine testing cell from the late 1940s until 1992. The building was connected to USTs for fueling engines during static testing. The concern for this AOC was the presence of fuels in soil beneath the building.	During the CS, 17 soil gas samples were analyzed for fuel chemicals. Only one of the samples reported low levels (less than 1 μg/L) of fuel chemicals. The CS recommended no further action for this AOC.	18, 19

TABLE 1 (continued)
DESCRIPTION OF SITES COMPRISING OPERABLE UNIT NUMBER 2

Site Name	Site Description	Site Activities and Conclusions	References
AOC 31 - Building 736	Building 736 was a hazardous test and fuels accessory facility from 1950 to the late 1960s when it was converted to a plastics shop, battery shop, mechanical equipment room, and refrigeration shop. The building included a sump and UST farm. The concern for the AOC was the leakage of chemicals and battery wastes.	During the CS, TCE was reported in a soil gas sample at 11 μg/L, which warranted additional investigation of the AOC. During the ESI, 37 soil gas samples were analyzed and TCE was reported for 22 of the samples at a maximum of 26 μg/L. Based on the relatively low concentrations of TCE reported in the soil gas and no detections of TCE in a soil sample, the ESI recommended no further action for this AOC.	18, 19, 21
AOC 32 - Building 741	Building 741 was used as a dry cleaning plant and an electronics overhaul facility from the mid-1940s through the late 1960s. The concern for this AOC was solvents in subsurface soils.	During the CS six soil samples were analyzed for solvents and fuel chemicals. There were no detections of solvents or fuels in the samples. The CS recommended no further action for this AOC.	18, 19
AOC 33 - Building 747	Building 747 was constructed in 1942 for use in the overhaul of aircraft engines and other aircraft parts. In 1967 it was converted into a freight terminal. The concern for this AOC was solvents in subsurfaces soils.	Building 747 was first investigated under the CBA OU TCE source investigation due to its history of chemical usage. TCE was not prevalent in soils below the building, but chlorobezene chemicals were detected. The extent of chlorobenzene contamination was evaluated during the CS and ESI. During these studies, 107 soil gas samples were analyzed and 40 soil borings drilled. Chlorobenzene contamination was located primarily along the southern edge of the building associated with waste sumps. Remedial options were evaluated in an EE/CA. Because soil contamination is beneath the building and pavement and because long-term land use is to remain for aircraft repair/support activities, the EE/CA and associated Action Memorandum recommended the establishment of deed restrictions for this AOC.	18, 19, 21, 22, 23

2427 15

TABLE 1 (continued)
DESCRIPTION OF SITES COMPRISING OPERABLE UNIT NUMBER 2

Site Name	Site Description	Site Activities and Conclusions	References
AOC 34 - Building 749	Building 749 was constructed in 1944 for use in aircraft overhaul and repair. In the mid-1960s it was converted to a warehouse and for aircraft latrine services. The concern for the AOC was solvents and fuel chemicals in subsurface soils.	During the CS, 22 soil gas samples were analyzed for solvent and fuel chemicals. Low levels of volatile chemicals (less than 1 μg/L) were reported for two of the samples. Eight soil borings were drilled during the CS and ESI. Low concentrations of fuel chemicals were detected (10 to 680 μg/kg). Based on the soil gas and soil sample results, the ESI recommended no further action for this AOC.	18, 19, 21
AOC 35 - Building 755	Building 755 was a blacksmith shop and foundry from the 1940s through the late 1960s. Metal plating operations were reported for the building. The concern for this AOC was solvents and metals in subsurface soils.	During the CS 11 soil gas samples were analyzed and 8 of the samples had detectable TCE at a 4.7 µg/L maximum concentration. Soil borings identified TCE at 77 µg/kg and lead (198 mg/kg) and zinc (126 mg/kg) in soil samples. During the ESI, 57 soil gas samples were analyzed and TCE was found between 1.4 µg/L and 49.3 µg/L. Eight soil borings were drilled, but no significant solvent or metals contamination was reported. Based on these results, the ESI recommended no further action for this AOC.	18, 19, 21
AOC 37 - Refuse Dump Area	The Refuse Dump area was used as a collection point for general refuse and debris. It also contained a washing pad where street sweepers were cleaned. The concern for this AOC was oils, grease, fuels, hydraulic fluids, and metals from waste handling and vehicle washing.	During the CS, four surface soil, three sediment, and two soil borings were drilled. The samples contained fuel and grease compounds and PCBs. The extent of contamination was defined during the ESI through the drilling of 35 soil borings. The ESI recommended removal of soil containing PCBs and petroleum chemicals above soil target cleanup goals. Cleanup options were assessed in an EE/CA and documented in an Action Memorandum. The soil removal action occurred in November 1996 with 8,925 cu yd of soil removed.	18, 19, 21, 12, 13, 14

TABLE 1 (continued)
DESCRIPTION OF SITES COMPRISING OPERABLE UNIT NUMBER 2

Site Name	Site Description	Site Activities and Conclusions	References
AOC 38 - C Street Outfall	The C Street Outfall represents the storm water discharge point into a surface drainage. This discharge point released stormwater collected in the northern OU2 area and northern airfield and flightline. Chemical use, aircraft cleaning, and aircraft fueling activities occurred in the area of surface water collection that discharged at the outfall. The concern for this AOC was fuels, hydraulic oils, and oil and grease in sediment in the outfall area.	During the CS, sediment, surface, and subsurface soil samples were collected. These samples contained diesel, oil and grease, and PCB compounds. During the ESI, 15 soil borings were drilled to define the extent of contamination. The ESI recommended removal of soil containing petroleum and PCB chemicals above the soil target cleanup goals. Cleanup options were assessed in an EE/CA and documented in an Action Memorandum. The soil removal action occurred in November 1996 with 1,493 cu yd of soil removed.	18, 19, 21, 12, 13, 14
AOC 42 Building 514	Build 514 was constructed in the mid-1950s for use as a chemical storage warehouse. During the period of use, the building contained acid storage rooms, a poison storage room, and a general chemical storage room. The concern for the building was the availability of environmental data documenting no significant contamination.	During the CS, 16 soil gas and 1 duplicate soil gas samples were collected. Low levels (less than 2 μg/L) of 1,1,1-trichloroethane, TCE, perchloroethylene, toluene, xylene, and 1,2,4-trimethylbenzene were detected in the soil gas samples. Three soil borings were drilled and sampled. Acetone was the only listed chemical reported. Based on the low levels of VOCs detected, the CS recommended no further action for AOC 42.	18, 19
AOC 45 - 500 Series Buildings	The 500-series buildings were located in the middle and southern portion of the OU2 area. These buildings had been mostly used for supply and depot warehouses and for administrative offices. There was little indication in base records that hazardous chemicals were used or disposed of in these buildings. The concern for the AOC was the availability of environmental data documenting no significant contamination.	During the CS addendum, 126 primary and 17 duplicate soil gas samples were collected from 124 locations in the 500-series buildings area. Benzene was reported for 8 of the samples at concentrations ranging between 2.6 and 3.8 µg/L. Toluene was detected at 1.1 µg/L in two samples. There was no significant chemical contamination reported for the 500-series building area, and the CS addendum recommended no further action.	18, 26

2427 17

TABLE 1 (continued)
DESCRIPTION OF SITES COMPRISING OPERABLE UNIT NUMBER 2

Site Name	Site Description	Site Activities and Conclusions	References
AOC 46 - 900 Series Buildings	The 900-series buildings were located in the westernmost edge of the OU2 area. These buildings were primarily used for supply and depot warehouses and administrative offices. The major exceptions were Buildings 922/942/945; Building 948, the DRMO; and Building 976, the entomology shop. Buildings 922/942/945 were used for the repair of Titan missiles involving small quantities of chemicals. DRMO was the primarily facility used by the base at the time of closure for the temporary storage of hazardous waste. The concern for the AOC was the availability of environmental data documenting no significant contamination.	During the CS addendum, 178 primary and 18 duplicate soil gas samples were collected from 177 points in the 900-series building area. The solvent 1,1,1-trichloroethane was detected five times at concentrations ranging between <1 and 6.2 µg/L. Two soil borings were drilled in the area of soil gas solvent contamination. Solvents were not detected in the samples. Based on the low level and infrequent detections of the chemicals, the CS addendum recommend no further action. The DRMO facility was closed under a Resource Conservation and Recovery Act (RCRA) action. Building 976 was investigated as AOC 64.	18, 26, 27, 28, 29, 30
AOC 47 - Detachment 10, Ballistic Missile Organization (BMO) Area	The Detachment 10/BMO area is located on a separate parcel of land south of the main portion of the OU2 area, bordered by Tippecanoe Ave. to the east and Mill St. to the north. The buildings comprising the BMO complex were constructed in the 1950s. The property was transferred to San Bernardino County in 1974 and re-acquired by the Air Force in 1982. The property is currently occupied by the Defense Finance and Accounting Agency and is the only portion of Norton AFB to be retained by the military. The concern for the AOC was a former UST and a possible debris pit.	During the CS Addendum, 28 soil gas samples were collected from throughout the BMO area. No VOCs of concern were detected in the samples. Four soil gas samples and three soil borings were drilled at the location of the former UST. No VOCs of concern were detected. A debris pit was not encountered during exploratory soil boring and soil gas samples collected from the vicinity of the suspected pit did not show the presence of VOCs. Based on these findings, the CS Addendum recommended no further action for the BMO area.	18, 26
AOC 53 - Building 403 SWAP	Building 53 was used as a carpenter and paint shop by civil engineering from the 1940s to the 1990s. It contained a satellite waste accumulation point (SWAP) used for the temporary storage of mineral oils, PCBs,	Three soil gas samples were analyzed and a soil boring drilled at this AOC. There were no detections of waste chemicals in any of the samples. Based on these findings, the CS Addendum recommended no further action for this AOC.	18, 26

4427 13

TABLE 1 (continued)
DESCRIPTION OF SITES COMPRISING OPERABLE UNIT NUMBER 2

Site Name	Site Description	Site Activities and Conclusions	References
AOC 53 - Building 403 SWAP (cont.)	freon, and oil filters in 55-gallon drums. The concern for the AOC was the presence of chemical wastes in soils.		18, 26
AOC 54 - Building 407 SWAP	Building 407 was used for the maintenance of liquid fuels equipment. The SWAP at this building stored rags, JP-4 aviation fuel, diesel, gasoline, and oil and grease in 55-gallon drums. The concern for the AOC was the presence of chemical wastes in soils.	One soil gas sample was analyzed and one soil boring drilled at this AOC. There were no detections of chemicals in the samples. Based on these finding, the CS Addendum recommended no further action for this AOC.	18, 26
AOC 55 - Building 412 SWAP	Building 412 was used as a storage facility for paints and other related materials, and as a maintenance facility, as part of civil engineering painting operations. The SWAP at this location stored paints, acids, oils, grease, lighter fluid, lubricating oil, hydraulic oil, and sealers. The concern for the AOC was the presence of chemical wastes in soils.	During the CS Addendum, five soil gas samples and one soil boring was drilled. Acetone, methyl ethyl ketone, and tetrachloroethene (PCE) were reported for the soil gas samples, but at concentrations less than 2 µg/L. PCE was the only chemical detected in two soil samples at a concentration of 8 µg/kg each. Based on these findings, the CS Addendum recommend no further action for this AOC.	18, 26
AOC 56 - Building 417 SWAP	The Building 417 SWAP was used for the storage of automotive wastes including Penetron, waste oil, absorbent, and batteries. The concern for the AOC was the presence of chemicals in soil.	During the CS Addendum, one soil gas sample was collected and one soil boring drilled. Acetone and methyl ethyl ketone were reported for the soil gas sample; there were no detections in the soil sample. Based on these findings, the CS Addendum recommended no further action for this AOC.	18, 26
AOC 57 - Building 427 SWAP	Building 427 was used as a diesel locomotive storage shed and as a fuels storage facility. Wastes stored at the SWAP included mineral oil and PCBs in 55-gallon drums. The concern for the AOC was the presence of waste chemicals in soils.	During the CS Addendum, one soil boring was drilled. The soil sample did not contain PCBs nor other chemicals. Based on this finding, the CS Addendum recommended no further action for this AOC.	18, 26

3427 19

TABLE 1 (continued)
DESCRIPTION OF SITES COMPRISING OPERABLE UNIT NUMBER 2

Site Name	Site Description	Site Activities and Conclusions	References
AOC 58 - Building 468 SWAP	Building 468 once housed a diesel-powered generator and an UST. The SWAP was used for storage of compressed gas cylinders, hydraulic fluid, and spray wax. The concern for the AOC was the presence of waste chemicals in soils.	During the CS Addendum, three soil gas samples were analyzed. The samples only contained acetone and methyl ethyl ketone. Five soil borings were drilled. The soil samples contained fuel and oil/grease compounds. Based on the results, the CS Addendum recommended additional characterization of the AOC to define the petroleum contamination. AOC 58 was further evaluated during the ESI Addendum No. 1. Five additional soil borings were drilled identifying petroleum contamination. However the extent of contamination was minor and the ESI Addendum No. 1 recommended no further action for this AOC.	18, 26, 31
AOC 59 - Building 620 SWAP and AOC 68 - Building 620 SWAP	AOC 59 represents the former civilian service station and AOC 68 the former car wash rack. The SWAP associated with the service station stored used solvents, used and drained oil filters, and used antifreeze. The car wash rack was used by personnel to clean personal vehicles. The concern for the AOC was the presence of petroleum and automotive waste chemicals in soils.	During the CS Addendum, eight soil gas samples were analyzed in the SWAP and wash rack areas. Acetone and methyl ethyl ketone were the only chemicals reported. One soil boring was drilled. There were no automotive waste chemicals in the sample. Based on the results, the CS Addendum recommended no further action at AOCs 59 and 68 .	18, 26
AOC 63 - Building 950 SWAP	AOC 63 is a SWAP associated with Building 950 located in the southeastern corner of the BMO property. The SWAP consisted of three storage conex boxes each approximately 6 x 8 ft in size. The total area of the SWAP was 75 x 75 ft. This SWAP stored adhesives, lubricants, paints, refrigerants, waste Freon, dead batteries, spent solvent, and waste oil. The concern for the AOC was the presence of waste chemicals in soil.	Six soil gas samples were collected at this location. None exhibited VOCs of concern. One soil boring was drilled and sampled at the SWAP. No chemicals of concern were detected in the soil sample. Based on the results, the CS Addendum No. 1 recommended no further action at AOC 63.	18, 26

2427 30

TABLE 1 (continued)
DESCRIPTION OF SITES COMPRISING OPERABLE UNIT NUMBER 2

Site Name	Site Description	Site Activities and Conclusions	References
AOC 64 - Building 976 SWAP	Building 976 was the base's Entomology Shop where insecticides and herbicides were mixed and stored. The concern for the AOC was the presence of pesticides/herbicide chemicals in soils beneath the concrete slab that supported the building.	Fourteen soil borings were drilled through the concrete foundation to access underlying soils. Low levels of metals (arsenic) and pesticides (DDT) were reported for the soil samples. The AOC was evaluated during the CS Addendum No.1. This study concluded that due low levels of contaminants present, no further action was warranted.	18, 26
AOC 66 - Gate 10 SWAP	Gate 10 was the westernmost point of entry into Norton AFB. After this gate was no longer needed, its location was used for the storage of gasoline filters, oil, and antifreeze in 55-gallon drums. The concern for this AOC was petroleum products in soil.	During the CS Addendum, one soil gas sample was analyzed. The sample reported the solvent tetrachloroethylene at 6.1 µg/L. One soil boring was drilled and sampled. The sample did not contain detectable solvent or petroleum chemicals. Based on these findings the CS Addendum recommended no further action for this AOC.	18, 26
AOC 73 - Explosive Ordnance Proficiency Training Range	AOC 73 was used for training exercises for individuals needing to maintain their military explosives handling certificates. Training exercises involved the detonation of a small explosives device (less than 2.5 pounds) at a pit within a small circular sand-bag barrier. The concern for the AOC was explosives wastes in soils.	Because the investigation of this AOC involved investigation of explosives and explosives wastes, the work was performed under the guidance of a separate work plan approved by the Air Force Safety Board. Fieldwork involved surveying the entire 600-ft-diameter range and the 10-ft-diameter demolition pit using geophysical equipment to locate buried metal debris. All metal debris located was excavated to identify its origin. The majority of the metal unearthed related to aircraft parts. No explosive waste material was identified. Soil samples from the demolition pit were collected and analyzed for explosive chemical residues. No chemicals were detected. Based on the results of the site clearance activities, the report for AOC 73 stated that the site had been cleared and recommended no further action.	32, 33, 34

2427 21

TABLE 2
OTHER ENVIRONMENTAL CLEANUP ACTIONS WITHIN THE AREA OF OU2

Activity Name	Activity Description	Investigations and Conclusions	Reference No.
Defense Reutilization and Marketing Office (DRMO)	The DRMO was used for the storage of excess materials and wastes generated at Norton AFB until resale or disposal. DRMO was used for the temporary storage of hazardous wastes under a Resource Conservation and Recovery Act (RCRA) permit. Wastes were stored in 55-gallon drums placed on wooden pallets. The DRMO operations occupied Buildings 964 and 970.	The DRMO RCRA facility was closed under a RCRA Closure Work Plan. Closure involved sampling of soil, asphalt, concrete, building surfaces, and groundwater within the facility for chemical constituents found in the wastes once stored at DRMO. Low levels of fuel-related chemicals, PCBs, phenols, and some metals were reported for the concrete and soil samples. The assessment report recommended small removal actions for localized area of concrete and soil contamination. The contaminated areas were removed and the action is documented in a closure report.	27, 28, 29, 30
Underground Storage Tank (UST) Management Program	This activity involved the removal of all remaining USTs used by the Air Force in the area of OU2. Contaminated soils found with the USTs were also excavated for treatment to remove petroleum contamination.	The UST program involved the removal of all USTs and soil cleanup at 13 locations in the OU2 area. A total of 27,000 cu yd of contaminated soil were excavated and removed: 3,200 cu yd were disposed of off-site; 3,800 cu yd were transported off-site for reuse as asphalt road base material and 21,000 cu yd were placed in a biocell for treatment with ultimate disposal at the site 2 landfill.	11, 11a

2427 22

TABLE 2 (continued)
OTHER ENVIRONMENTAL CLEANUP ACTIONS WITHIN THE AREA OF OU2

Activity Name	Activity Description	Investigations and Conclusions	Reference No.
Building 752 Radium Cleanup Program	One room within Building 752 was used during the early 1950s for the painting of aircraft dials with luminescent paint containing radium-226, a radioactive element. Use of radium-226 ceased in 1954 when the room was sealed.	In 1965, an Air Force Regional Health Laboratory Team conducted an inspection of the room and removed all remaining paint and mixing pots stored in a safe since 1954. The team fixed residual paint to the walls of the room. Cleanup of the room, sewage system, and contaminated soils associated with paint wastes occurred in 1994 and 1996. The removal action is ongoing (September 1997) and is not expected to be completed until the end of 1997.	20, 20,a, 35, 36
Industrial Waste Line (IWL) RCRA Closure	The IWL transported wastewater from aircraft repair facilities located in the eastern Central Base Area and the flightline to an Industrial Waste Treatment Plant located at the southern base boundary.	The IWL has been investigated under several programs for soil contamination and as a source to the TCE groundwater plume. Only minor contamination has been reported. The IWL will be closed by grouting the structure in place with a cement slurry mixture.	24, 37, 38
Basewide Soil and Groundwater Radionuclides Study	The activity involved the sampling of soil basewide and groundwater on-base and in the vicinity of the base to establish background concentrations for radionuclides and to determine whether military use of the air base had left residual radionuclide concentrations in soil and groundwater.	The results of the radionuclide investigations showed that with the exception of Building 752, all radionuclides present in base soils or in groundwater were a result of radionuclides naturally occurring in soil material or were the result of global fallout. Elevated concentrations of radionuclides in groundwater were attributable to radionuclides present in soil.	20, 20a, 39

TABLE 2 (continued)
OTHER ENVIRONMENTAL CLEANUP ACTIONS WITHIN THE AREA OF OU2

Activity Name	Activity Description	Investigations and Conclusions	Reference No.
Sanitary Sewer Line Radionuclides Investigation	The sinks and drains within Building 752 were used for the washing and rinsing of luminescent paint containing Radium-226. This practice resulted in the flushing of paint wastes into the sanitary sewer system.	To determine whether residual radium paint waste remained in the sewer system, samples of solid materials were collected at three sewer locations. The sewer line was inspected for solids buildup at manhole locations and it was determined that sewer line flows were sufficient to prevent buildup of solids that could retain radium paint wastes. Concentrations of radionuclides in the sewer line samples only slightly exceeded background. A risk assessment was performed on the sewer line radionuclides which concluded no significant threat to human health. Based on the findings and observations, the study recommended no further evaluation of the sanitary sewer system.	40

2427 24

The cleanup of contaminated sites within the area of OU2 followed the process summarized in the above paragraph. The details of specific activities performed at Norton AFB are described in the following text and sections of this Proposed Plan.

The scope of the RI performed to address the nature and extent of environmental contamination related to the IRP sites is described in a work plan (Ref. 8). Three IRP sites are located in the area of OU No. 2: sites 6, 8, and 14 (Figure 2). The results of the RI are presented in an RI Report (Ref. 9). An FS was not performed to evaluate remedial options for the three IRP sites. For two of the OU2 IRP sites (sites 8 and 14) EE/CAs (Refs. 12 and 15) and Action Memoranda (Refs. 13 and 16) were developed to present the cleanup options. The descriptions of cleanup activities are presented in site closure reports (Refs. 14 and 17). IRP site 6 was cleaned up under the base's UST program (Ref. 10) because of the presence of petroleum related contamination.

The 1982 Records Search (Ref. 2) focused on locations where chemical wastes were known or suspected to have been disposed, but it did not evaluate locations where chemicals were used or stored. To assess all base locations where chemical use occurred, additional records searches took place in 1992 and 1994 involving on-base records (Ref. 18) and off- base records (Ref. 32). These record searches resulted in the identification of 73 areas of concern (AOCs) basewide, and 38 AOCs for the OU2 area (Figure 2). Each of the AOCs was subject to a confirmation study involving collection of soil and soil gas samples within the area of the AOC (Refs. 19 and 26). AOCs with significant contamination were further evaluated under an ESI (Refs. 21). Cleanup options for the AOCs were assessed in one of two EE/CAs (Refs. 12 and 15) and formalized in respective Action Memoranda (Ref. 13 and 16).

The RI (Ref. 9) and subsequent ESIs (Refs. 21 and 31) typically involved one of three activities: soil gas sampling, soil sampling, and groundwater sampling. Many of the chemicals used by the Air Force, including solvents and fuels, are volatile. If disposed of in soil, the presence of the chemicals can be effectively determined through the collection of a soil gas sample by drawing air through a tube pushed into the ground. The sample is then analyzed in a field instrument that reports the chemical and its concentration. Through the collection of a series of soil gas samples in a suspect chemical use area, the specific location of the spill can be located. Once the source is located, a soil sample is collected for analysis for the presence of the volatile chemical and non-volatile chemicals, such as metals and polychlorinated biphenyls (PCBs), if they are also suspected to be present.

During the RI, numerous groundwater monitoring wells were installed. The wells served two purposes. First, if the specific spill or disposal site were unknown, the collection of groundwater samples in the downgradient flow direction can aid in locating the source and determining if it is a problem. Second, monitoring wells were also used to define the extent of groundwater contamination once located. During the RI and ESI performed in the OU2 area, more than 1,000 soil gas, 1,000 soil, and 2,000 groundwater samples were collected and analyzed during the process of defining contamination and in the cleanup of contaminated areas.

The results of the RI showed that the two IRP sites within the OU2 area (site 6 fuel contamination and site 8 PCB contamination) had sufficient levels of contamination necessitating cleanup to protect human health and groundwater resources. IRP site 14 contained paint and paint thinner wastes that, because they were buried 10 feet below the ground in an industrial yard, the contamination did not pose a risk to human health. The ESI results showed that two AOCs (AOC 37 and AOC 38) contained contamination above human health protection criteria. Two other AOCs (AOC 18 and 33) contained elevated concentrations of fuels and solvents, but did not pose a threat to human health because the contamination was under pavement and buildings limiting human exposure to the buried chemicals. The types of chemicals and relative concentrations found at the IRP sites and AOCs within the OU2 area are presented in Table 1.

SUMMARY OF CLEANUP STANDARDS

During the course of the development of the soil cleanup goals for contaminated sites at Norton AFB, the USEPA determined that site conditions at Norton AFB were similar to the assumptions that USEPA used in developing its Preliminary Remediation Goals (PRGs) (Ref. 41). USEPA established the PRGs for use in the initial evaluation of the need for site cleanup. The PRGs are based on frequent human exposure to chemicals in soil assuming direct contact with, inhalation of dust, consumption of contaminated soils, and consumption of contaminated groundwater. Because the majority of Norton AFB sites were soil contamination problems that did not threaten groundwater, these assumptions fit the Norton AFB risk model. Therefore, USEPA requested the Air Force to evaluate the USEPA PRGs for use in cleaning up Norton AFB soil-contaminated sites. The evaluation of the USEPA PRGs and soil PRGs developed by Cal-EPA is presented in the document *Development and Evaluation of Soil Target Cleanup Goals, Industrial/Commercial Reuse Scenario, IRP Sites Cleanup, Norton Air Force Base* (Ref. 42). Although the long-term land use for the former Norton AFB is for non-residential purposes (e.g., offices, warehousing, light industrial, airfield, and aircraft maintenance), the Air Force evaluated soil cleanup values that addressed both the commercial and residential scenarios. The soil target cleanup goals (TCGs) developed for Norton AFB are listed in Table 3. This table presents the soil cleanup values based on an industrial/commercial reuse of the base (i.e., use of the base for commercial purposes such as offices, warehouses, industrial, airport activities) and for reuse of the base for residential activities (i.e., houses, schools, churches, etc.). Cleanup to industrial standards restricts future land use to other than residential activities. Cleanup to residential values allows unrestricted future use of the former contaminated property.

The Norton AFB soil target cleanup goals were used as the basis of evaluating risks posed by chemicals present at the AOCs within OU2. If the statistically generated average concentration (termed an exposure point concentration) exceeded the soil cleanup goal for a chemical, then the AOC was subject to a more detailed evaluation of the need for a soil cleanup action. If the exposure point concentration was less than the soil cleanup goal, then no further action was determined for the AOC.

Some of the chemicals found in soils at Norton AFB can migrate downward in percolating rain and lawn irrigation water and thus end up in the underlying aquifer. These chemicals include the petroleum-related compounds toluene, ethylbenzene, and xylene, and the solvent-related compounds chlorobenzene, 1,2-dichlorobenzene, and 1,4-dichlorobenzene. The Air Force used a computer model to simulate the downwater movement of these chemicals in soils into the aquifer. The computer model results were used to established soil target cleanup goals protective of the drinking water aquifer. The groundwater protective cleanup goals for the chemicals are listed in Table 4.

The groundwater protective soil TCGs are only applicable to situations with bare surface soil or irrigated lawns. These soil TCGs do not apply to sites or AOCs that have asphalt or cement pavement that prevents the percolation of rain/irrigation water into and through the contaminated soil.

ASSESSMENT OF HEALTH RISKS

The assessment of risks due to the presence of chemicals at the three IRP sites was performed during the RI and reported in the IRP Sites RI Report (Ref. 9). The risk assessment was based on USEPA (Refs. 43, 44, 45, 46, 47) and Cal-EPA (Ref. 48) procedures and criteria for determining risk to human health. This assessment concluded that the levels of PCBs found in soil at IRP site 8 posed an adverse health risk due to direct contact, soil consumption, and inhalation of dust. Paint wastes found at IRP site 14 did not pose an adverse risk due to the types of chemicals and the depth at which they were buried (Ref. 9). Benzo(a)pyrene was detected at IRP site 6 less than 10 ft below ground surface, but the majority of petroleum contamination was buried at depths greater than 20 ft bgs surface and did not pose a direct contact risk. Because benzene, a component of fuel, had been detected in perched groundwater near IRP site 6, benzene posed a threat to drinking water resources.

TABLE 3
SOIL CLEANUP STANDARDS[1] FOR NORTON AFB
(concentrations in milligrams per kilogram)

Chemical	Residential Cleanup Goal	Industrial Cleanup Goal	Chemical	Residential Cleanup Goal	Industrial Cleanup Goal
Benzene	1.9	4.4	Naphthalene	120	180
Chlorobenzene	220	810	PCBs	0.025	0.19
1,2-Dichlorobenzene	2,300	2,300	Dioxins/Furans	0.0000038	0.000024
1,4-Dichlorobenzene	9	25	Aldrin	0.026	0.11
cis-1,2-Dichloroethene	81	290	Hexachlorocyclohexane	0.28	1.2
trans-1,2-Dichloroethene	230	840	Chlordane	0.34	1.5
Ethylbenzene	3,400	3,400	DDD	1.9	7.9
2-Methylphenol	3,300	34,000	DDT	1.3	5.6
4-Methylphenol	330	3,400	Endosulfan	3.3	34
2,4-Dimethylphenol	1,300	14,000	Methoxychlor	330	3,400
Tetrachlorethene	3.1	3.1	Cyanide	1,300	14,000
Toluene	870	2,700	Antimony	31	680
Trichloroethene	3.3	7.3	Arsenic	1.5	2.0
Xylene	980	980	Beryllium	0.7	0.7
Acenaphthene	360	360	Cadmium	9.0	650
Anthracene	19	19	Chromium (III/VI)	150	150
Benzo(a)pyrene	0.02	0.12	Copper	2,800	63,000
Benz(a)anthracene	0.61	2.6	Lead	160	1,000
Benzo(b)fluoranthene	0.61	2.6	Mercury	23	510
Benzo(k)fluoranthene	0.61	1.24	Nickel	150	10,680
Chrysene	6.1	16.5	Selenium	380	8,500
Fluoranthene	2,600	27,000	Silver	380	8,500
Fluorene	300	300	Thallium	6.1	140
Indeno(1,2,3-cd)pyrene	0.61	2.6	Zinc	23,000	100,000
Pyrene	2,000	20,000			

[1]The Soil Cleanup Standards for Norton AFB are also termed Soil Target Cleanup Goals (Ref.42).

TABLE 4

PRE-REMEDIAL ACTION COMPARISON OF EXPOSURE POINT CONCENTRATIONS WITH SOIL CLEANUP STANDARDS FOR IRP SITES AND AOCs WITHIN OU2

CONSTITUENTS DETECTED ABOVE SOIL TCGS	EXPOSURE POINT CONCENTRATIONS (mg/kg)	SOIL TCG RESIDENTIAL (mg/kg)	SOIL TCG INDUSTRIAL (mg/kg)	GROUNDWATER PROTECTIVE SOIL TCG (mg/kg)
Site 6				
Benzo(a) pyrene	0.30	0.02	0.12	NA
Site 8				
PCBs	0.40	0.025	0.19	NA
Site 14				
Ethylbenzene	0.01	3,400.	3,400	10
Toluene	0.10	870	2,700	20
Xylene	0.03	980	980	20
Chromium	132	150	150	NA
Lead	339	160	1,000	NA
Mercury	3.3	23	510	NA
AOC 18				
Ethylbenzene	52	3,400	3,400	10
Xylene	480	980	980	20
AOC 33				
Chlorobenzene	1.27	220	810	1.0
1,2-Dichlorobenzene	65	2,300	2,300	4.3
1,4-Dichlorobenzene	41	9	25	0.86
AOC 37				
Arsenic	1.5	1.5	2.0	NA
PCBs	0.284	0.025	0.19	NA
Benzo(a)pyrene	0.525	0.02	0.12	NA
Benzo(b)fluoranthene	1.13	0.61	2.6	NA
Benzo(k)fluoranthene	1.11	0.61	1.24	NA
AOC 38				
PCBs	0.034	0.025	0.19	NA
Benzo(a)pyrene	0.35	0.02	0.12	NA
Beryllium	29.8	0.7	0.7	NA
Chromium	954	150	150	NA
Lead	1,442	160	1,000	NA

mg/kg = milligrams per kilogram or parts per million
NA = groundwater protective standards not developed for chemicals that are either insoluble or immobile in soils

Three AOCs were determined to have soil contaminants at levels above the soil cleanup standards and thus could pose an adverse risk. These AOCs include AOC 33, AOC 37, and AOC 38. AOC 18 contained petroleum chemicals at concentrations below the human health cleanup standards, but because the chemicals are mobile in soils, the concern for AOC 18 was for migration of the chemicals into the underlying aquifer should the asphalt cover be removed. The chemicals present at the IRP sites and AOCs and their concentrations in relation to cleanup goals are presented in Table 4.

ECOLOGICAL RISK ASSESSMENT

The Air Force assessed the risks to plants and animals (ecological receptors) at Norton AFB based on the level of soil contamination associated with the IRP sites (Ref. 49). The ecological risk assessment included an evaluation of all plant and animal habitats throughout the base. The OU2 area is located within the most highly developed portion of the base (roads, parking lots, buildings, urban lawns, and trees) and does not support a significant habitat for threatened or endangered species. The only species of special status, the burrowing owl (listed by the State of California as a sensitive species), was found to inhabit building storm water pipes in the OU2 area. This species did not inhabit contaminated sites. The ecological risk assessment did not identify any risks to plants and animals at any of the sites within OU2.

EVALUATION OF CLEANUP METHODS

To identify and select cleanup measures that would reduce risk to human health and the environment due to the presence of contaminants in soils, the Air Force considered a variety of applicable options. The options were evaluated and compared against criteria that assessed the ease of implementing of the remedy and the effectiveness of meeting human health protection goals. The evaluation of cleanup options is documented in one of three EE/CA documents (Refs. 12, 15, and 22). The criteria used in the evaluation are listed below.

1. Overall Protection of Human Health and the Environment - This criterion addresses how the action protects human health and describes how risks are reduced.
2. Compliance with Applicable or Relevant and Appropriate Requirements - This criterion considers how the action will meet federal and state rules and regulations.
3. Long-Term Effectiveness and Permanence - This criterion refers to how the action will be protective over time.
4. Reduction of Toxicity, Mobility and Volume - This criterion assesses how the action reduced chemical toxicity, movement, and volume of affected media at the site.
5. Short-term Effectiveness - This criterion assesses how the public and workers will be protected during implementation of the action.
6. Implementability - This criterion refers to the ease of performing the action and outlines the technical and administrative constraints.
7. Cost - This criterion compares the relative costs (construction and operations) of each action in relation to the overall protectiveness achieved.
8. State Acceptance - This criterion includes acceptance by Cal-EPA and the Regional Water Quality Control Board. Acceptance was achieved through review and revision of primary documents.
9. Community Acceptance - This criterion includes the local community and agencies. Acceptance was determined through public review of documents and feedback at public meetings.

With the exception of the CBA groundwater TCE plume addressed as part of the CBA OU, all of the actions required for the OU2 area involved soil contamination problems. The soil contamination problems were typically shallow in depth (i.e., less than 10 feet below ground surface), except IRP site 6 where contamination extended to below 40 feet. Another similarity among the contaminated sites is that the soil did not exhibit high levels of

contamination posing a high level of risk (see Table 4). With the exception of the paint waste at AOC 14, the contaminant levels were typically below regulatory standards making the soil a hazard waste. In all cases the risks posed by the sites were within the acceptable cancer risk range of 1×10^{-4} to 1×10^{-6} excess cancer probability and produced a hazard index of less than one, based on unrestricted exposure to the contaminated soil.

Based on these similar conditions, several options were evaluated for reduction of risk. These options include:

- No Action - The no action alternative was evaluated to form the basis to determine the long-term risk if the contaminated soil was left in place and unrestricted exposure was allowed.

- Institutional Controls - This option involved leaving in place the contaminated soils (typically buried beneath buildings or pavement) and incorporating a restriction into the property deed that would prevent excavation and use of soil at the site without first taking proper measures. This option was considered because the long-term land use plans for Norton AFB involve retaining buildings and reuse for commercial and other nonresidential activities.

- Excavation and Off-Site Disposal - This option involved removal of all soil containing chemicals above the cleanup standards and transport of the soil to a licensed waste disposal facility. This option was most appropriate for soil that contained chemicals above regulatory hazardous waste standards, but was considered for all sites and AOCs.

- Excavation and On-Site Disposal - This option involved removal of all soil-containing chemicals above the cleanup standards and transport to the site 2 landfill located on the northeastern corner of the base (Figure 1). The site 2 landfill is being closed under State of California landfill standards. Because the on-site landfill closure project required a considerable amount of soil to develop a foundation for the final cap, this option represented a beneficial use of the contaminated soils.

SELECTED CLEANUP ALTERNATIVES AND REMOVAL ACTIONS

IRP Site 6 - Underground Waste Oil Storage Tank

IRP site 6 was the location of former USTs and a military vehicle fueling station. The RI conducted on this site (Ref. 9) showed subsurface soils contaminated with petroleum-related chemicals. The only chemical exceeding its soil TCG in the upper 10 feet of soil was benzo(a)pyrene. Cleanup of IRP site 6 was performed under Norton AFB's UST program (Ref. 10). The primary remedial action performed under the UST program was the excavation of soils containing petroleum chemicals and the transport of the soils to bio-venting cells, located in the northeast base area of Norton AFB, for treatment. Treated soils were then transported to the IRP site 2 landfill for use as foundation soil material for construction of the final cap. The removal of the petroleum- contaminated soil reduced any potential threat that the chemicals would pose to the underlying aquifer, and placement of the treated soils below the cap of the site 2 landfill is a beneficial reuse of the soil which prevents any future exposure to residual chemicals remaining in the soil. Because IRP site 6 involved petroleum- contaminated soils, regulatory agency oversight of the action was reviewed by the California RWQCB. The Air Force received concurrence from the California RWQCB when it accepted the UST closure report (Ref. 10).

IRP Site 8 - PCB Spill Area

IRP site 8 was the location of a former drum and transformer storage area. A spill of PCB fluids in 1981 resulted in a soil removal action at that time. However, soil samples collected during the RI (Ref. 9) and after the

RI (Ref. 12) showed the presence of PCB chemicals above Norton AFB soil cleanup goals. Cleanup options for the site were evaluated in an EE/CA (Ref. 12). Because the PCBs present in soil were at concentrations below hazardous waste levels, two cleanup options were considered for the site: (1) excavation and onsite reuse as foundation soil at the site 2 landfill and (2) excavation and transport offsite for disposal at a licensed waste disposal facility. Option 1 was chosen for the site 8 soils. Option 1 was described in an EE/CA released for public comment on December 18, 1995. No significant public comments were received on this site that changed the remedy selected for this site. USEPA and Cal-EPA concurred with the remedial action when they signed the Action Memorandum (Ref. 13). Action 1 represented a beneficial use of the soil as foundation material for the final cap for the site 2 landfill. Excavation of the contaminated soil from IRP site 8 eliminated all human health and environmental risks at the site and placement of the soil at the landfill below the final cover prevents any potential for future exposure to the PCBs. The removal action is described in Ref. 14.

IRP Site 14 - Waste Pit No. 4

IRP site 14 was the location of two waste pits used for the disposal of waste paints and paint thinners. Because the soil contamination was located below a paved area and was not extensive in volume, the site did not pose a significant threat to human health or the environment. Site cleanup was performed more as a cosmetic cleanup of paint wastes than to reduce the site risk. Two cleanup options were considered for the contaminated soil at IRP site 14: (1) excavation and reuse as foundation soil at the site 2 landfill and (2) excavation and off-site disposal in a permitted facility. Option 2 was the primary action considered for soil containing paint waste chemicals that exceeded hazardous waste standards. Public comment on the two options was solicited when the EE/CA (Ref. 15) was released on March 13, 1996. No significant public comments were received on the EE/CA that changed the selected remedy. USEPA and Cal-EPA concurred with the selected actions when each agency signed the Action Memorandum in October 1996. Site excavation activities are described in a closure report (Ref. 17). Chemical testing of the soil during removal indicated that it contained petroleum hydrocarbons in paint thinners (toluene, ethylbenzene, and xylene) and the metals chromium, lead, and mercury. Soil containing petroleum chemicals and metals at concentrations below hazardous waste standards were transported to IRP site 2 for use as foundation material for the final cover. Soil containing petroleum chemicals and/or metals exceeding hazardous waste standards were transported off-site for disposal at a permitted waste disposal facility. The soil removal actions at IRP site 14 eliminated all threats to human health and groundwater resources for both industrial and residential use of the property. Placement of nonhazardous waste soil beneath the cover of the site 2 landfill will prevent future exposure and prevent chemical migration, as does the disposal of hazardous waste soil at a permitted facility.

AOC 18 - Former Buildings 451/452

AOC 18 was the site of a former fueling station and railroad tank car off-loading facility. Site investigation results (Ref. 19) indicated the presence of petroleum-related chemicals (ethylbenzene and xylene) beneath paved areas forming an access road and parking lot. Because the petroleum chemicals are buried below 10 feet, the chemicals do not pose a threat to human health. The chemicals are mobile in soil and could migrate to groundwater if the pavement above were to be removed. Three actions were considered for AOC 18 (Ref. 22): (1) institutional controls (the incorporation of deed restriction identifying the presence of the contaminated soils), (2) excavation and reuse as foundation soil at the site 2 landfill, and (3) excavation and off-site disposal at a permitted facility. Option number 1 was selected for AOC 18. The contaminated soil does not pose a significant threat to human health and migration of the contaminants is limited by the asphalt cover. In addition, the types of petroleum chemicals detected at AOC 18 can rapidly degrade in the environment and thus are not a serious threat to the underlying groundwater. The deed restriction (option 1) will identify the location of the contaminated soils so that if excavation of the area is done in the future, the contaminated soils can be properly handled. Site investigations of AOC 18 were reviewed by USEPA and Cal-EPA. The EE/CA (Ref. 22) describing the cleanup alternatives was provided to the public for review on February 21, 1997. No significant comments were received from the public. USEPA and Cal-EPA approved the preferred alternative in their signing of the Action Memorandum (Ref. 23) for AOC 18.

AOC 33 - Building 747

AOC 33 or Building 747 is the location where the significant repair of aircraft engines and parts repairs was performed. Site investigations (Ref. 21) showed soil contamination by chlorobezene, 1,2-dichlorobenzene, and 1,4-dichlorobenzene below paved areas below and adjacent to the building. Concentrations of these three chemicals exceeded soil cleanup criteria established to protect groundwater resources. If the pavement above the contaminated soil were to be removed, the contaminants could migrate downward into groundwater. Three options were considered for AOC 33 (Ref. 22): (1) institutional controls (the incorporation of deed restriction identifying the presence of the contaminated soils), (2) excavation and reuse as foundation soil at the site 2 landfill, and (3) excavation and off-site disposal at a permitted facility. Option number 1 was selected for AOC 33. The contaminated soil does not pose a significant threat to human health and migration of the contaminants is limited by the concrete and asphalt covers. The long-term land-use plans for the Building 747 area is for continued use for aircraft support and repair activities. The cover over the contaminated soils will prevent downward migration and human contact with the chemicals. The EE/CA (Ref. 22) describing the cleanup alternatives was provided to the public for review on February 21, 1997. No significant comments were received from the public that changed the selected remedy. USEPA and Cal-EPA approved the preferred alternative in their signing of the Action Memorandum (Ref. 23) for AOC 33.

AOC 37 - Refuse Dump Area

The refuse dump area (AOC 37) was used as a collection point for general debris, storage of roll-off bins, and for the washing of street-cleaning equipment. Site investigations (Ref. 21) showed the presence of PCBs and polycyclic aromatic hydrocarbons [benzo(a)pyrene, benzo(b)fluoranthene, and benzo(k)fluoranthene] in surface soil above soil target cleanup goals. Due to the proximity of AOC 37 to adjacent residential areas, cleanup of the AOC considered residential standards. Two options were considered for the AOC 37 soils: (1) excavation and on-site reuse as foundation material for the site 2 landfill cap and (2) excavation and off-site disposal at a licensed waste disposal facility (Ref. 14). Option 1 was selected for the AOC 37 contaminated soils (Ref. 13). The EE/CA (Ref. 12) describing the cleanup alternatives was provided to the public for review on March 21, 1996. No significant comments were received from the public that required changing the selected cleanup method. USEPA and Cal-EPA approved the preferred alternative in their signing of the Action Memorandum (Ref. 13) for AOC 37. Soil removal was performed during the fall of 1996. The removal involved excavation of soil from the site and transport to the IRP site 2 landfill for use as base material for the final cover. The removal action is described in a closure report (Ref. 14). Excavation and removal of the contaminated soils at the AOC location prevents any future potential for exposure to the contaminated soils and placement of the soils at the site 2 landfill is a beneficial use of the soil. Once the site 2 landfill cap is constructed, any future exposure to the soils will be prevented.

AOC 38 - C Street Storm Drain Outfall Area

The C Street Storm Drain Outfall (AOC 38) represents the discharge point for storm water collected from the northern flightline area of the Norton AFB airfield and for stormwater collected from surface streets in the CBA. Site investigations results showed PCBs, benzo(a)pyrene, beryllium, chromium, and lead above soil cleanup goals. Due to the proximity of the storm drain discharge area to adjacent residences, this location was considered for cleanup to residential standards. Two options were considered for the AOC 38 soils: (1) excavation and on-site reuse as foundation material for the site 2 landfill cap and (2) excavation and off-site disposal at a licensed waste disposal facility (Ref. 12). Option 1 was selected for the AOC 38 contaminated soils (Ref. 13). Soil removal was performed during the fall of 1996 and is described in a closure report (Ref. 14). Excavation and removal of the contaminated soils at the AOC location prevents any future potential for exposure to the contaminated soils and placement of the soils at the site 2 landfill is a beneficial use of the soil. Once the site 2 landfill cap is constructed, any future exposure to the soils will be prevented. The EE/CA (Ref. 12) describing the cleanup alternatives was provided to the public for review on March 21, 1996. No significant comments were received from the public that required changing the

selected cleanup method. USEPA and Cal-EPA approved the preferred alternative in their signing of the Action Memorandum (Ref. 13) for AOC 38.

POST-REMEDIAL ACTION RISKS

After all the removal actions were completed within OU2, risk evaluations were performed using exposure point concentrations developed from the residual contaminant concentrations in soils. This evaluation assessed the potential noncarcinogenic and carcinogenic risks from direct exposure to contaminated soils. Cancer risks were measured in terms of the probability of an individual developing cancer. Typically the carcinogenic risk is expressed in terms of the increased cancer risk expressed in the number of cancers in a million individuals in the population. For example a 1 in 1 million increase is expressed 1×10^{-6}. Potential noncarcinogenic effects were evaluated by comparing an exposure level with a toxicological reference dose. This ratio is called a hazard index. The hazard index assumes that there is a threshold level of exposure below which it is unlikely for even sensitive populations to experience adverse health effects. The USEPA in the NCP (Ref. 5) indicates that action at a site is generally not warranted if the cumulative carcinogenic risk is less than 100 in 1 million (or 1×10^{-4}, 1 in 10,000) or the cumulative noncarcinogenic risk is less than 1.

The post-remedial action risk analyses indicated that there are no current human health risks at any of the sites. Several of the sites were evaluated under the assumption that the property at the sites would continue to be used for industrial/commercial activities. To prevent any future contact with contaminated soils which could occur during residential land use activities, deed restrictions will be placed on the property at AOC 18 and AOC 33. The deed restriction will identify contaminant concentrations, limit future land use to industrial/commercial activities, and preclude use of the land for residential purposes. A summary of the risks at each site is described below. Table 5 provides a comparison of the analytical data for IRP sites and AOCs subject to cleanup considerations.

IRP sites 6 and 14 were subject to complete soil removals to below 10 feet followed by backfilling with clean soil, thereby removing all chemical risk. Thirty-one of the 38 AOCs exhibited no soil contamination as evidenced through site characterization studies and therefore posed no chemical risk. Table 6 summarizes the residual cancer and non-cancer risks IRP site 8 and seven AOCs (AOCs 23, 33, 37, 38, 55, 58 and 64) with soil contamination remaining following completion of all identified remedial considerations. These risk values are based on the assumption that all surface cover remaining over contaminated sites (e.g., pavement and/or buildings) is removed and that a site worker would frequently visit each location as part of normal work activities. The risk values were developed using standard USEPA risk assessment assumptions and default factors as described in Refs. 42, 44 and 45. The mathematical equations used to derive the cancer risk and hazard indices are those developed by USEPA (Refs. 44, 46, and 47). The overall cumulative cancer and non-cancer risk to workers from the residual chemicals in the OU2 area is 1.9×10^{-6} and 0.0044, respectively (Table 6)

The following text describes the residual risks for OU2 area sites and AOCs that were subject to cleanup considerations through the EE/CA and Action Memorandum process.

IRP Site 6 - Underground Waste Oil Storage Tanks

This site contained soils contaminated with petroleum-related chemicals from USTs that were removed in 1982. The contaminated soils from this site were excavated in 1995. A total of 13 confirmation soil samples were collected from the sidewalls and bottom of the excavation area. Concentrations of benzo(a)pyrene were below TCGs for residential land use in all the confirmation samples (Ref. 10). The site has been subsequently repaved to form a portion of the parking lot for the San Bernardino International Airport passenger facility. There are no remaining risks to human health or to groundwater resources for IRP site 6. No deed restrictions will be placed on this property.

TABLE 5
COMPARISON OF POST-REMEDIAL ACTION-SOIL CONTAMINATION LEVELS WITH NORTON AFB SOIL CLEANUP STANDARDS

Chemical of Concern	Post Cleanup Soil Confirmation Sample Results (mg/kg)			Exceeds Industrial Cleanup Goal?	Exceeds Residential Cleanup Goal?	Requires Deed Restriction?
	Low	Average	High			
IRP Site 6						
Benzo(a)pyrene	ND	ND	ND	No	No	No
IRP Site 8						
PCBs	0.05	0.021	0 .061	No	No	No
IRP Site 14						
Ethyl benzene	0.002	0.008	0.190	No	No	No
Toluene	0.001	0.089	2.20	No	No	No
Xylene	0.001	0.071	1.88	No	No	No
Chromium	3.6	7.3	12.6	No	No	No
Lead	1.5	3.7	18.2	No	No	No
Mercury	0.01	0.10	2.0	No	No	No
AOC 18						
Ethyl benzene	0.053	1.688	52.0	No[1]	No[1]	Yes
Xylene	6.2	15.7	480.0	No[1]	No[1]	Yes
AOC 33						
Chlorobenzene	0.032	1.27	8	No[1]	No[1]	Yes
1,2-dichlorobenzene	0.00	65.0	320	No[1]	No[1]	Yes
1,4-dichlorobenzene	0.002	41.0	200	Yes	Yes	Yes
AOC37						
Arsenic	----	1.50	----	No	No	No
PCBs	0.020	0.021	0.930	No	No	No
Benzo(a)pyrene	0.052	0.018	0.790	No	No	No
Benzo(b)fluoranthene	0.012	0.042	0.250	No	No	No
Benzo(k)fluoranthene	0.016	0.036	0.260	No	No	No
AOC 38						
PCBs	----	----	----			
Benzo(a)pyrene	0.007	0.015	1.10	No	No	No
Beryllium	0.08	0.15	0.27	No	No	No
Chromium	4.1	12.7	41.9	No	No	No
Lead	1.4	7.9	29.4	No	No	No

ND = not detected
--- =not available
[1]Maximum concentration exceeds groundwater protective soil TGC.
mg/kg = milligrams per kilogram or parts per million

TABLE 6 RESIDUAL CHEMICAL RISKS FOR OU2 AREA SITES AND AOCs[1]

Site Name	Chemical Contaminant	Exposure Point Concentration (mg/kg)	Hazard Index (unitless)	Cancer Risk (unitless)	Comment
IRP Site 8	Polychlorinated Biphenyls	0.061	0.0013	7×10^{-8}	Site subject to two removal actions.
AOC 23	Trichloroethene (TCE)	0.002	0.00000129	3×10^{-11}	Based on detection of TCE in only 1 sample
AOC 33	Chlorobenzene 1,2-Dichlorobenzene 1,4-Dichlorobenzene	1.2 65 41	0.000164 0.0014 0.00039	NC NC 1×10^{-6}	Contamination is buried beneath concrete in an industrialized area. A deed restriction will identify its presence to future land users.
AOC 37	Benzo(a)pyrene Polychlorinated Biphenyls	0.0141 0.0134	NA 0.001	9×10^{-8} 5×10^{-8}	Site was subject to a removal action to reduce contamination to these levels.
AOC 38	Benzo(a)pyrene Beryllium	0.0156 0.169	NA 0.00002	9×10^{-8} 5×10^{-8}	Site was subject to a removal action to reduce contamination to these levels.
AOC 55	Tetrachloroethene (PCE)	0.008	0.00000245	7×10^{-11}	Based on detections of PCE in only 2 samples
AOC 58	Fluoranthene Pyrene Benzo(a)pyrene	0.065 0.072 0.053	0.00000239 0.00000352 NA	NC NC 1×10^{-7}	No removal action performed at this AOC because residual chemicals are within the acceptable risk range.
AOC 64	Heptachlor Endosulfan DDT Endrin Aldehyde Heptachlor Epoxide	0.00037 0.0011 0.0014 0.0005 0.00087	0.00000139 NA 0.00000411 0.00000245 0.00000982	9×10^{-10} NC 2×10^{-10} NC 4×10^{-9}	No removal action performed at this AOC becuase residual chemicals are within the acceptable risk range.
Total Residual Risk:			0.0044	1.9×10^{-6}	All residual risk is in the acceptable range.

1 This table presents data for soil contamination currently present at these sites/AOCs. The remaining 31 AOCs exhibited no soil contamination and IRP sites 6 and 14 were subject to complete soil removals to below 10 feet resulting in no residual chemical risk.

NC = Chemical is not a known or suspected human carcinogen. NA = data on chemical not available to develop reference dose.

The Hazard Index provides a relative indication of the ability of the chemical to produce noncarcinogenic toxic effects. An index of >1.0 is the departure point to determine adverse risk.

The acceptable cancer risk range is 1×10^{-4} to 1×10^{-6}. A cancer risk of $>1 \times 10^{-4}$ typically requires an action to protect human health. pplou2t6

2427 35

IRP Site 8 - PCB Spill Area

This site contained soils contaminated with PCBs from the storage of transformers and drums containing dielectric fluids. Before the soil removal, the site contained PCB concentrations above the industrial soil TCG of 0.19 milligrams per kilogram (mg/kg), with an exposure point concentration of PCBs of 0.4 mg/kg. After PCB-contaminated soils were excavated from the site in 1996, 24 confirmation samples were collected from the sidewalls and bottom of the excavation area (Ref. 14). PCBs were detected in only two of the 24 confirmation samples. One sample contained 0.061 mg/kg Aroclor-1254 and one sample contained 0.054 mg/kg Aroclor-1260. The mean concentration of the 24 samples, using the detection limits to estimate the mean, was 0.021 mg/kg. All samples were below the industrial soil TCG for PCB of 0.19 mg/kg and the mean concentration was below the residential soil TCG of 0.025 mg/kg. The carcinogenic risk for this site of 7×10^{-8} does not exceed the acceptable risk level established by USEPA for CERCLA sites (1×10^{-4} to 1×10^{-6}). No deed restrictions will be placed on this property.

IRP Site 14 - Waste Pit No. 4

This site was the location of two former waste pits used for the disposal of paints and paint thinners. Ethylbenzene, toluene, and xylene, other petroleum chemicals (primarily paint thinners), chromium, and lead were detected in soils to a depth of 12 feet below ground surface (bgs). The Norton AFB soil TCGs were developed primarily to protect human health due to direct contact with contaminated soils. As such the TCGs only apply to soil contamination that is within 10 ft of the ground surface. However, because petroleum chemicals (also termed total petroleum hydrocarbons or TPH) can migrate downward into groundwater, the Air Force developed alternative soil TCGs for TPH that would be protective of groundwater resources. The TPH soil TCG was 100 parts per million TPH in soil. The Air Force removed soil containing petroleum chemicals exceeding the TPH soil TCG and also performed a cosmetic cleanup to remove visibly stained soils. Approximately 115 cu yd of soil were initially removed from the two pits (Ref. 15). No contaminant concentrations exceeded the TPH soil TCG in any of the nine samples collected from the northern pit, while three of the nine samples collected from the southern pit exceeded the TPH soil TCG. An additional 305 cubic yards of soil were removed from the southern pit followed by the collection of an additional 15 confirmation samples. Petroleum-related chemicals were detected above the TPH soil TCG in one confirmation sample collected at 19 ft below ground surface. Although one of the 15 confirmation samples exceeded the TPH soil TCG, the cosmetic cleanup of site 14 is considered complete. The petroleum chemicals remaining at site 14 are not considered a risk to human health because (1) the new asphalt pavement installed at site 14 will allow little, if any, infiltration; (2) no impacts to groundwater have been identified in any investigations to date; and (3) the locations of the residual chemicals are covered with 19 feet of a cement-sand slurry. A deed restriction will be placed on this property identifying the location of the former waste pit.

AOC 18 - Buildings 451/452

This site is the location of a former gas station in operation from 1942 to the late 1960s, and a railroad car off-loading facility. A total of 77 soil samples were collected at AOC 18. Ethylbenzene and xylene were the only contaminants detected above groundwater-protective soil TCGs in any of the 77 soil samples. The maximum ethylbenzene concentration (52 mg/kg) and the maximum xylene concentration (160 mg/kg) were detected at 10 ft bgs. Since the contamination at AOC 18 is located in an commercial area at a depth of more than 10 ft bgs, this site is not considered a threat to human health via direct contact. Given the age of this problem, the depth to groundwater (85 ft bgs), and the fact the ethylbenzene and xylene are readily biodegradable, the threat to groundwater is considered minimal. Deed restrictions will be placed on the property at this site to prevent any direct contact with contaminated soils which could occur during residential activities (Refs. 22 and 23).

AOC 33 - Building 747

Building 747 supported operations for the repair and overhaul of engines and other aircraft parts. Over 150 soil samples were collected at this site during the RI, confirmation study, and ESI (Ref. 9, 19, and 21). Chlorobenzene, 1,2-dichlorobenzene, and 1,4-dichlorobenzene were each detected above groundwater protection-based TCGs in three samples. The maximum detected concentrations of chlorobenzene, 1,2-dichlorobenzene, and 1,4-dichlorobenzene were 8 mg/kg, 320 mg/kg, and 200 mg/kg, respectively. No other contaminants were detected above TCGs at this site. A risk evaluation of this AOC was conducted in an EE/CA (Ref. 22). Because the site is covered by pavement preventing migration of the contaminants into groundwater, the long-term land use is for aircraft maintenance and support, and the overall risk is minimal and no long-term significant risk is predicted for the contaminated soils at the site (Refs. 22 and 23). The cumulative carcinogenic risk of 1×10^{-6} does not exceed the acceptable risk range of 1×10^{-4} to 1×10^{-6} established by USEPA. A deed restriction will be placed on this property identifying the locations of the chemicals that exceed the soil TCGs.

AOC 37 - Refuse Dump Area

AOC 37 was used as a collection point for general refuse and debris, including storage for roll-off dumpsters and a washing pad to rinse street sweeper vehicles. Rinse waters drained from the site in one of three drainage ditches. Over 100 soil samples were collected at this AOC (Ref. 21). Exposure point concentrations were above residential TCGs for the following contaminants: PCBs, benzo(a)pyrene, benzo(b)fluoranthene, and benzo(k)fluoranthene. Soil removal activities were completed in four phases due to concentrations of contaminants exceeding residential TCGs in numerous confirmation samples. No benzo(b)fluoranthene and benzo(k)fluoranthene were detected above TCGs in any of the 115 confirmation samples. The mean concentration of benzo(a)pyrene in the confirmation samples was 0.018 mg/kg, which is below the residential TCG of 0.020. The mean concentration of PCBs in the confirmation samples was 0.021 mg/kg, which is below the residential TCG of 0.025 mg/kg. The cumulative carcinogenic risk of 1.4×10^{-7} does not exceed the acceptable risk range of 1×10^{-4} to 1×10^{-6} established by USEPA. Residual contaminant concentrations remaining at this AOC are below residential cleanup levels and no long-term risk is predicted for this location (Ref. 14). Therefore, no deed restriction will be placed on this property.

AOC 38 - C Street Storm Drain Outfall

This site includes the C Street Storm Drain Outfall Area, a discharge point for storm drain lines originating in the northern CBA, and portions of the flight line where hazardous materials were once used. The storm drain empties into an open concrete spillway, which then empties into a dirt drainage channel. Samples collected during site investigations (Ref. 21) indicated PCBs, benzo(a)pyrene, beryllium, chromium, and lead were present in some samples above their respective soil TCGs, with the exposure point concentrations for these chemicals exceeding residential soil TCGs. Contaminated soils were removed from the site in 1996 in three phases due to concentrations of benzo(a)pyrene above residential TCGs. Confirmation samples were collected after soil removal at 33 locations. The results of the confirmation samples indicate contaminant concentrations at AOC 38 are below residential TCGs and no long-term risk is predicted for this AOC (Ref. 14). Therefore, no deed restriction will be required for this property. The cumulative carcinogenic risk of 1.4×10^{-7} does not exceed the acceptable risk range of 1×10^{-4} to 1×10^{-6} established by USEPA.

OPERABLE UNIT 2 PROPOSED PLAN SUMMARY AND CONCLUSIONS

This Proposed Plan describes the steps implemented by the Air Force to locate, characterize, and cleanup locations within the OU2 area of the former Norton AFB with sufficient chemical contamination that if left unabated could pose a threat to human health and the environment. These locations include IRP sites 6, 8, and 14, and AOCs 18, 33, 37, and 38. Oversight of Air Force investigative and cleanup activities was provided by representatives of USEPA and Cal-EPA (California Department of Toxic Substances Control and the Santa Ana Regional Water Quality Control Board). Public input into the Air Force activities at Norton AFB has been provided through the Norton AFB Restoration Advisory Board (RAB) which includes local citizens and representatives from local public agencies.

The cleanup standards used to evaluate all locations within the OU2 area exhibiting soil contamination were jointly developed by the Air Force, USEPA, and Cal-EPA (Ref. 42). Table 3 of this Proposed Plan lists the cleanup standards applied to the OU2 area sites and AOCs. The cleanup standards were achieved at all locations within the OU2 area that were subject to soil removal actions. Deed restrictions will be established for the locations where no cleanup was performed and contaminated soil will remain buried beneath pavement.

Cleanup options for the IRP sites and AOCS with soil contamination exceeding cleanup criteria were described and assessed in engineering evaluation/cost analysis (EE/CA) documents that were reviewed by USEPA, Cal-EPA, and the general public (Refs. 12, 15, and 22). During the public comment period on each EE/CA, the cleanup issues issues raised by the public did not change the preferred actions. One comment letter was received on the Parcel I-3 EE/CA (site 8, AOCs 37 and 38); all comment issues were resolved (Ref. 13). There were no public comments received on the EE/CAs addressing site 14 (Ref. 15) and AOCs 14 and 33 (Ref. 22). The rationale for remedy selection for each of the IRP sites and AOCs were described in Action Memorandum documents (Refs. 13, 16 and 23). The Action Memoranda have been reviewed and approved by USEPA and Cal-EPA, and signed by representatives from the Air Force, USEPA, and Cal-EPA. Cleanup of IRP site 6 was performed under the review of the Santa Ana Regional Water Quality Control Board, the State agency with the responsibility for the oversight and approval of cleanup of petroleum contaminated (UST) sites. Cleanup of Norton AFB UST sites was one of the many environmental activities discussed during the RAB meetings attended by the public.

All of the selected actions described in the EE/CAs and Action Memoranda have been completed. The closure reports describing the actions have been reviewed and accepted by USEPA and Cal-EPA (Refs. 10, 14, and 17). The Air Force will be soon releasing a Record of Decision document that will conclude that all actions have been taken for the OU2 area and that no further action is necessary. The OU2 ROD will be in essence a 'no further action' ROD. The Air Force is thus announcing in this Proposed Plan that it has completed its obligations for the investigation and cleanup of the OU2 area and is seeking public comment on its decision that no further action is necessary. Comments received from the public on the content of this Proposed Plan will be incorporated into the Responsiveness Summary section of the OU2 Record of Decision.

DEFINITIONS OF KEY TERMS USED IN THE PROPOSED PLAN

Action Memorandum (AM): The AM is used as the document that provides the rationale for selection of a remedial action that was described in the EE/CA. AMs are also used to implement time-critical removal actions. Like a ROD, the AM is signed by the parties involved in the decision. For Norton AFB they were the Air Force, USEPA, and the State of California. However, completion of the remedial action is eventually formalized in a final ROD for the action.

Engineering Evaluation/Cost Analysis (EE/CA): An EE/CA is a focused FS that is used for non-time critical removal actions. It is typically used for situations where few cleanup options are possible or where cleanup can be done using a well-proven technique.

Exposure Point Concentration: The exposure point concentration is the statistically generated average soil concentration that is used as the basis for evaluating the exposure and thus risk of contaminant in soil, water or air. The value is derived from the 95th percent upper confidence limit of the mean. Typically, the statistical application of the contamination data results in a exposure value that is above the average concentration resulting in a conservative basis for the making of cleanup decisions.

Feasibility Study (FS): During the FS process, engineering and institutional measures are assessed that can reduce the risks resulting from the presence of the environmental contaminants. Alternatives for cleaning up or preventing exposure to the contaminants are considered and compared to nine criteria. The FS forms the basis for identifying and selecting the alternative that will reduce the risk.

Hazard Index (HI): The HI represents the ratio of an exposure concentration to a reference dose that has been established at a concentration for which even sensitive populations will not experience an adverse health effect. An HI of 1 reflects an exposure concentration where the chemical concentration equals the safe reference dose. Therefore an HI greater than 1 becomes the departure point for concern for noncarcinogenic adverse affects. Soil cleanup is considered when the HI exceeds 1.

Installation Restoration Program (IRP): IRP is the environmental investigation and cleanup process that the Air Force implemented at Air Force bases. The IRP process typically parallels that established by USEPA for investigation and cleanup of industrial sites.

National Priorities List (NPL): The NPL is USEPA's listing of sites where it has deemed that spills or releases/or threats of spills have occurred. Each site is evaluated based on the degree of risk to human health and the environment and then assigned a numeric score used to rank the site in relation to other sites.

Operable Unit (OU): A site that has contamination at more than one location, has soil and groundwater contamination, or has different contamination types (e.g., metals, solvents, PCBs), can have each contamination area or problem evaluated separately. Each separate evaluation is termed an OU based on geographic, media (soil, water, air), or chemical type considerations.

Preliminary Assessment (PA): A PA typically involves review of records and interviews of employees to obtain information on chemical usage, handling practices, and disposal activities. The results of the PA are used to determine whether sampling for the presence of environmental contamination is necessary.

Proposed Plan (PP): The PP is the document prepared for public review that describes the rationale for the selection of a cleanup remedy. The PP is issued to the public for review and comment.

Record of Decision (ROD): The ROD is the legal document that describes and formalizes the remedy that will reduce the risk. For Norton AFB, RODs are reviewed and signed by the Air Force, USEPA, and the State of California. The ROD includes public comments on the Proposed Plan and responses to those comments.

Remedial Investigation (RI)/Expanded Source Investigation (ESI): An RI (also termed ESI) follows the SI when the SI indicates the presence of environmental contamination. The RI is a more extensive sampling program during which numerous soil, air, and/or groundwater samples can be collected to define the nature (the types of chemicals present and their concentrations) and extent (area and volume) of contamination. Also part of the RI is the performance of a risk assessment which evaluates the potential health threats due to the presence of the contaminants in soil, air, and water.

Site Investigation (SI)/Confirmation Study (CS): An SI, which also is termed a confirmation study, is performed when the results of a PA indicate that chemical spills or waste disposal have occurred on a property. The SI typically involves the collection of soil, soil gas, and/or air samples at the suspected location. Occasionally, groundwater monitoring wells are also installed near the suspected location as a means of locating the site and determining groundwater contamination.

ABBREVIATIONS USED IN THE PROPOSED PLAN

AFB	Air Force Base
AM	Action Memorandum
AOC	area of concern
ARARs	Applicable or Relevant and Appropriate Requirements
Cal-EPA	California Environmental Protection Agency
CBA	Central Base Area
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CS	Confirmation Study
cu yd	cubic yard
DRMO	Defense Reutilization and Marketing Office
EE/CA	Engineering Evaluation/Cost Analysis
ESI	Expanded Source Investigation
FFA	Federal Facilities Agreement
FS	Feasibility Study
GPR	Ground penetrating radar
IRP	Installation Restoration Program
IWL	Industrial Waste line
μg/L	micrograms per liter
μg/kg	micrograms per kilogram
mg/kg	milligrams per kilogram
NCP	National Contingency Plan
NPL	National Priorities List
OU	Operable Unit
OU2	Operable Unit No. 2
OU3	Operable Unit No. 3
PA	Preliminary Assessment
PCBs	polychlorinated biphenyls
PRG	Preliminary Remediation Goal
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
Ref.	Reference
RI	Remedial Investigation
ROD	Record of Decision
RWQCB	Regional Water Quality Control Board
SI	Site Investigation
SWAP	Satellite Waste Accumulation Point
TCE	Trichloroethylene
TCG	Target Cleanup Goal
TPH	Total Petroleum Hydrocarbons
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound

BIBLIOGRAPHY

1. USAF, 1993. *Environmental Impact Statement for Disposal and Reuse of Norton AFB.*

2. Engineering-Science, Inc., 1982. *Installation Restoration Program, Phase I: Records Search Norton AFB, California.*

3. Ecology and Environment, Inc., 1987. *Installation Restoration Program, Phase II - Confirmation/ Quantification, Stage 2, Final Report, May 1986 - September 1987.*

4. Ecology and Environment Inc., 1988. *Installation Restoration Program, Stage 3, Final Report, September 1987 - December 1988, Norton Air Force Base, California.*

5. USEPA, 1990. *National Oil and Hazardous Substances Pollution Contingency Plan;* Final Rule. Federal Register, Volume 55, No. 46, March 28, 1990 (40 *Code of Federal Regulations* Part 300).

6. USAF, 1992. *Norton Air Force Base Central Base Area Operable Unit Proposed Plan.*

7. USAF, 1993. *Norton Air Force Base Central Base Area Operable Unit Record of Decision.*

8. CDM Federal Programs Corporation (CDM Federal), 1991. *Final Comprehensive Remedial Investigation and Feasibility Study Work Plan for Norton Air Force Base, San Bernardino, California.*

9. CDM Federal, 1993. *Final Norton Air Force Base Remedial Investigation Report, Installation Restoration Program Sites Operable Unit (15 Sites).*

10. Bechtel, 1996. *Closure Report, Former Underground Storage Tank Site at Building 647, IRP Site 6, Norton Air Force Base, California.*

11. Bechtel Environmental, 1997. *Project Summary Report Underground Storage Tank Removal Program, Norton Air Force Base.*

11a. Booz-Allen & Hamilton, 1997. *Underground Storage Tank Closure Summary Report, Norton Air Force Base, California.*

12. CDM Federal, 1996. *Final Engineering Evaluation/Cost Analysis, Parcel I-3, Norton Air Force Base, San Bernardino, California.*

13. USAF, 1996. *Final Action Memorandum for Parcel I-3, Norton Air Force Base.*

14. Bechtel Environmental Inc., 1997. *Draft Closure Report, IRP Site 8, Areas of Concern 3, 23, 37, 38, and the Heating Oil Line.*

15. Ogden Environmental and Energy Services Company, Inc. (Ogden), 1996. *Final Engineering Evaluation/Cost Analysis, Sites 13, 14, and 22, Norton Air Force Base, San Bernardino, California.*

16. USAF, 1996 *Action Memorandum, Sites 13, 14, and 22, Norton Air Force Base, San Bernardino California.*

17. Ogden, 1997. *Draft Closure Report, IRP Sites 13 and 14, Norton Air Force Base, California, Former Industrial Waste Treatment Plant Sludge Disposal Area and Waste Pit Number 4.*

18. CDM Federal, 1993. *Final Basewide Records Search, Norton Air Force Base, San Bernardino California.*

19. CDM Federal, 1996. *Final Technical Memorandum, Basewide Confirmation Study Results/Expanded Source Investigation Work Plan for Norton Air Force Base, San Bernardino, California.*

20. IT Corporation, 1996. *Final Basewide Soil Characterization Report, Basewide Radionuclide Characterization, Norton Air Force Base, California.*

20a. IT Corporation, 1996. *Basewide Soil Characterization Report Addendum, Building 752 Wasteline Removal Project, Norton AFB, California, Draft.*

21. CDM Federal, 1996. *Final Technical Memorandum, Expanded Source Investigation Results, Norton Air Force Base, San Bernardino, California.*

22. CDM Federal, 1997. *Engineering Evaluation/Cost Analysis Areas of Concern 4, 18, 33, 39, 40, and 70, Norton Air Force Base, San Bernardino, California.*

23. USAF, 1997. *Action Memorandum Areas of Concern 4, 18, 33, 39, 40, and 70, Norton Air Force Base, San Bernardino, California.*

24. CDM Federal, 1992. *Remedial Investigation Report, Central Base Area Operable Unit.*

25. Earth Tech, Inc., 1996. *Closure Report, Building 658 and IRP Site 9 TCE Source Area Remediation, Central Base Area Operable Unit, Norton Air Force Base, California.*

26. CDM Federal, 1996. *Final Technical Memorandum, Basewide Confirmation Study Addendum No. 1 Expanded Source Investigation Work Plan No. 1 for Norton Air Force Base, San Bernardino, California.*

27. TetraTech, Inc., 1995. *Final Assessment Report for RCRA Closure of the Defense Reutilization and Marketing Office, Norton Air Force Base, San Bernardino, California.*

28. GEC Environmental Consultants, Inc., 1993. *RCRA Closure Plan for the Defense Reutilization and Marketing Office at Norton Air Force Base.*

29. Morrison-Knudsen, 1995. *RCRA Closure for the Defense Reutilization and Marketing Office at Norton Air Force Base, Slab Demolition and Removal Final Report.*

30. US Air Force, 1996. RCRA Closure of the Defense Reutilization and Marketing Office, Norton Air Force Base Hazardous Material/Waste Storage Facility.

31. CDM Federal, 1996. *Final Technical Memorandum, Expanded Source Investigation Addendum Number 1, Norton Air Force Base, San Bernardino, California.*

32. U.S. Army Corps of Engineers, 1994. *Archives Search Report, Norton Air Force Base.*

33. CDM Federal and Allied Technology Group, 1997. *Work Plan for Explosive Ordnance Training Area Clearance, Area of Concern 73, Norton Air Force Base, San Bernardino, California.*

34. CDM Federal and Allied Technology Group, 1997. *Explosive Ordnance Disposal Proficiency Training Range (Area of Concern 73) Clearance Report, Norton Air Force Base, San Bernardino, California.*

35. Kopp, 1965. *Health Physics Evaluation of Radium Contamination, Building 752, Norton AFB, California.*

36. Jacobs Engineering, 1994. *Building 752 Remediation, Low-Level Radiological Contamination.*

37. Burke Engineers, 1993. *Integrity Testing and Investigation of the Industrial Waste Line System Associated with Facility 1264.*

38. CDM Federal, 1996. *Industrial Waste Line RCRA Closure Plan for Norton Air Force Base, San Bernardino, California.*

39. IT Corporation, 1996. *Basewide Groundwater Characterization Report. Basewide Radionuclide Characterization, Norton Air Force Base, California.*

40. CDM Federal, 1997. *Data Summary Report for the Radiological Investigation of the Sanitary Sewer, Norton Air Force Base, San Bernardino, California.*

41. USEPA Region IX, 1994. *Region IX Preliminary Remediation Goals (PRGs), Second Half of 1994.*

42. CDM Federal, 1995. *Development and Evaluation of Soil Target Cleanup Goals, Industrial/Commercial Reuse Scenario, IRP Sites Cleanup, Norton Air Force Base, San Bernardino, California.*

43. USEPA, 1989. *Risk Assessment Guidance for Superfund. Volume 1: Human Health Evaluation Manual.* OSWER Directive 9285.7-01a.

44. USEPA, 1989. *Exposure Factors Handbook.* EPA/600/8-89/043, July.

45. USEPA, 1991. *Human Health Evaluation Manual Supplemental Guidance 'Standard Default Exposure Factors'.* OSWER Directive 9285.6-03.

46. USEPA, 1992. *Dermal Exposure Assessment: Principle and Applications.* EPA/600/89/0118.

47. USEPA, 1993. *Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure.*

48. State of California Environmental Protection Agency. 1994. *Preliminary Endangerment Assessment Guidance Manual.*

49. CDM Federal, 1997. *Ecological Risk Assessment Report for Norton Air Force Base, San Bernardino California.*

FOR MORE INFORMATION

For more information about the public involvement process or if you have questions or comments about environmental activities at Norton AFB, please contact:

Tom Bartol
BRAC Environmental Coordinator
AFBCA/DD Norton
305 S. Tippecanoe Ave.
San Bernardino, CA 92408
909-382-5027

Kathleen Sayler
Remedial Project Managers
75 Hawthorne Street
San Francisco, CA 94105
800-231-3075

Manuel Alonzo
Project Manager
235 W. Broadway, Suite 450
Long Beach, CA 90802
562-590-4949

John Broderick
Santa Ana Regional Water Quality
Control Board
3737 Main St., Suite 500
Riverside, CA 92501
909-782-4494

INFORMATION REPOSITORY

The Air Force maintains an information repository at the Norman Feldheym Central Library in San Bernardino that contains all of the referenced documents cited in this Proposed Plan. The information repository contains other documents related to the environmental cleanup of Norton AFB including the Community Relations Plan, fact sheets, *Restoration Review* (the Norton AFB newsletter), and other documents. The Air Force encourages you to use this information resource during your review of this Proposed Plan, which will facilitate your participation in the decision process regarding the OU2 Proposed Plan.

Norman Feldheym Central Library
California Room
555 West Sixth St.
San Bernardino, CA 92410
Tuesday through Saturday
10:00 a.m. to 6:00 p.m.

RESTORATION ADVISORY BOARD

The Restoration Advisory Board (RAB) is the primary means for the public to meet with Air Force officials, and representatives from USEPA and the State of California regulatory agencies to discuss the status of environmental activities. The RAB has been meeting on a regular basis since 1994 and includes representatives from the local community. Currently the RAB is meeting on the second Wednesday of every other month. The public is encouraged to attend and participate in the meetings.

Norton AFB Restoration Advisory Board
Sessions are held 6:30 p.m. to 8:00 p.m.
Loma Linda Civic Center Community Room
25541 Barton Road
Loma Linda, CA 92354

Notifications of RAB meetings are published in the San Bernardino Sun and Press-Enterprise

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE

2427 48

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE

NORTON AFB
CALIFORNIA

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 4235

United States Air Force

Installation Restoration Program

Final

Second CBA OU Five-Year Review Report for Former Norton Air Force Base San Bernardino County, California

December 2005

Contact No. F41624-03-D-8597, Delivery Order No. 0058

Approved by: Kathryn M. Halvorson

Kathryn M. Halvorson
Director, Air Force Real Property Agency
U.S. Air Force

Date: 11 Jan 06

THIS PAGE INTENTIONALLY LEFT BLANK

DEPARTMENT OF THE AIR FORCE
AIR FORCE REAL PROPERTY AGENCY

30 November 2005

MEMORANDUM FOR SEE DISTRIBUTION

FROM: AFRPA/Western Region
3411 Olson Street
McClellan CA 95652-1003

SUBJECT: Final Five-Year Review, Former Norton Air Force Base

The final Norton five-year review report is attached for your record. This is Norton's second statutory review. The responses to your comments on the draft document are found in Appendix C. We will distribute the authorizing signature page once it has been returned from AFRPA headquarters.

Thank you for your continuing support of the Norton cleanup program. If you have any questions, please do not hesitate to contact me at (916) 643-0830 ext. 209.

PHILIP H. MOOK, JR., P.E.
Regional Environmental Coordinator

Attachment:
Final Five-Year Review, Former Norton Air Force Base

DISTRIBUTION LIST

TO:

Mr. James Chang
US Environmental Protection Agency
Remedial Project Manager, SFD-8-1
75 Hawthorne Street
San Francisco, CA 94105

Mr. John Broderick
California RWQCB, Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3339

Mr. Stephen Niou
Cal-EPA/DTSC
Office of Military Facilities
5796 Corporate Avenue
Cypress, CA 90630

Mr. Jim Gourley
SBIAA/IVDA
294 S. Leland Norton Way
San Bernardino, CA 92408

Mr. Jerry Bingham
HQ AFCEE/ERB
3300 Sidney Brooks
Brooks City-Base, Texas 78235-5334

Mr. John Fringer
AFRPA/COO
1700 North Moore Street, Suite 2300
Arlington, VA 22209

Mr. Dexter Cochnauer (w/o attachment)
AFRPA/Western Region
3411 Olson Street
McClellan CA 95652-1003

Norton Administrative Record
c/o Ms. Linda Spitzer, ET

Required Item	Location in Document
General Report Format	
Signed concurrence memorandum (as appropriate)	Appendix C
Title page with signature and date	See pages v and vi
Completed five-year review summary form	After List of Acronyms
List of documents reviewed	Section 8
Site maps	See List of Figures
List of tables and figures	Table of Contents
Interview report (as appropriate)	Appendix B
Site inspection checklist	Appendix A
Photos documenting site conditions (as appropriate)	Not appropriate
Introduction	
The purpose of the five-year review	Section 1.0
Authority for conducting the five-year review	Section 1.0
Who conducted the five-year review (lead agency) and when	Section 4.0
Organizations providing analyses in support of the review (e.g., the contractor supporting the lead agency)	Section 4.0
Other review participants or support agencies	Section 4.0
Review number (e.g., first, second)	Section 1.0
Trigger action and date	Section 1.0
Number, description, and status of all operable units at the site	Section 3.9
If review covers only part of a site, explain approach	Not applicable
Define which areas are covered in the five-year review	Not applicable
Summarize the status of other areas of the site that are not covered in the present five-year	Not applicable
Site Chronology	
List all important site events and relevant dates (e.g., date of initial discovery of problem, dates of pre-NPL responses, date of NPL listing, etc.)	Section 2.0
Background	
General site description (e.g., size, topography, and geology)	Sections 3.1 through 3.8
Former, current, and future land use(s) of the site and surrounding areas	Section 3.3
History of contamination	Section 3.9 and 3.10
Initial response (e.g., removals)	Section 3.0

Required Item	Location in Document
Basis for taking remedial action (e.g., contaminants)	Section 3.0

Remedial Actions (Groundwater Component, CBA OU)

Regulatory actions (e.g., date and description of Records of Decision, Explanations of Significant Difference, Administrative Orders on Consent, Consent Decrees and Action Memorandum)	Table 2-1
Remedial action objectives	Section 4.1
Remedy description	Section 4.1
Remedy implementation (e.g., status, history, enforcement actions, performance)	Section 4.1.2
Systems operations/Operations & Maintenance	Section 4.1.3
Systems operations/O&M requirements	Section 4.1.3
Systems operations/O&M operational summary (e.g., history, modifications, problems, and successes)	Section 4.1.3
Summary of costs of system operations/O&M effectiveness (i.e., are requirements being met and are activities effective in maintaining the remedy?)	Section 4.1.3

Progress Since Last Five-Year Review (Groundwater Component, CBA OU)

Protectiveness statements from last review	Section 4.1.4
Status of recommendations and follow-up actions from last review	Section 4.1.4
Results of implemented actions, including whether they achieved the intended effect	Section 4.1.4
Status of any other prior issues	Section 4.1.4

Five-Year Review Process (Groundwater Component, CBA OU)

Administrative Components	Section 4.0
Notification of potentially interested parties of initiation of review process	Section 4.0
Identification of five-year review team members (as appropriate)	Section 4.0
Outline of components and schedule of your five-year review	Section 4.0
Community Involvement	Section 4.0
Community notification (prior and post review)	Section 4.0
Other community involvement activities (e.g., notices, fact sheets, etc., as appropriate)	Section 4.0
Document review	Section 4.0
Data review	Section 4.0
Site inspection	Appendix A
Inspection date	Appendix A

Required Item	Location in Document
Inspection participants	Appendix A
Site inspection scope and procedures	Appendix A
Site inspection results, conclusions	Appendix A
Inspection checklist	Appendix A
Interviews	Appendix B
Interview date(s) and location(s)	Appendix B
Interview participants (name, title, etc.)	Appendix B
Interview documentation	Appendix B
Interview summary	Appendix B

Technical Assessment (Groundwater Component, CBA OU)

Question A: Is the remedy functioning as intended by the decision documents?	Section 5.1.2
remedial action performance (i.e., is the remedy operating as designed?)	Section 5.1.2
system operations/O&M	Section 5.1.2
cost of system operations/O&M	Section 5.1.2
opportunities for optimization	Section 5.1.2
early indicators of potential issues	Section 5.1.2
implementation of institutional controls and other measures	Section 5.1.2
Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?	Section 5.1.2
changes in standards, newly promulgated standards, TBCs	Section 5.1.2
expected progress towards meeting RAOs	Section 5.1.2
changes in exposure pathways	Section 5.1.2
changes in land use	Section 5.1.2
new contaminants and/or contaminant sources	Section 5.1.2
remedy byproducts	Section 5.1.2
changes in toxicity and other contaminant characteristics	Section 5.1.2
risk recalculation/assessment (as applicable)	Not applicable
Question C: Has any other information come to light that could call into question the protectiveness of the remedy?	Section 5.1.2
new or previously unidentified ecological risks	Section 5.1.2
natural disaster impacts	Section 5.1.2
any other information that could call into question the protectiveness of the remedy	Section 5.1.2

Required Item	Location in Document
Technical Assessment Summary	Section 5.1.2

Issues (Groundwater Component, CBA OU)

Issues identified during the technical assessment and other five-year review activities	Section 5.1.3
Determination of whether issues affect current or future protectiveness	Section 5.1.3
A discussion of unresolved issues raised by support agencies and the community (States, Tribes, other Federal agencies, local governments, citizens, PRPs, other interested parties), if applicable	Section 5.1.3

Recommendations and Follow-up Actions (Groundwater Component, CBA OU)

Required/suggested improvements to identified issues or to current site operations	Section 5.1.4
Note parties responsible for actions	Section 5.1.4
Note agency with oversight authority	Section 5.1.4
Schedule for completion of actions related to resolution of issues	Not applicable

Protectiveness Statements (Groundwater Component, CBA OU)

Protectiveness statement for the CBA OU	Section 5.0
Comprehensive protectiveness statement covering all of the remedies at the site (if applicable)	Section 5.0

Next Review (Groundwater Component, CBA OU)

Expected date of next review	Section 6.0
If five-year reviews will no longer be done, provide a summary of that portion of the technical analysis presented in the report that provides the rationale for discontinuation of five-year reviews	Section 6.0

Required Item	Location in Document

Remedial Actions (Site 19, BW OU)

Regulatory actions (e.g., date and description of Records of Decision, Explanations of Significant Difference, Administrative Orders on Consent, Consent Decrees and Action Memorandum)	Table 2-1
Remedial action objectives	Section 4.2
Remedy description	Section 4.2
Remedy implementation (e.g., status, history, enforcement actions, performance)	Section 4.2.2
Systems operations/Operations & Maintenance	Section 4.2.3
Systems operations/O&M requirements	Section 4.2.3
Systems operations/O&M operational summary (e.g., history, modifications, problems, and successes)	Section 4.2.3
Summary of costs of system operations/O&M effectiveness (i.e., are requirements being met and are activities effective in maintaining the remedy?)	Section 4.2.3

Progress Since Last Five-Year Review (Site 19, BW OU)

Protectiveness statements from last review	Not applicable
Status of recommendations and follow-up actions from last review	Not applicable
Results of implemented actions, including whether they achieved the intended effect	Not applicable
Status of any other prior issues	Not applicable

Five-Year Review Process (Site 19, BW OU)

Administrative Components	Section 4.0
Notification of potentially interested parties of initiation of review process	Section 4.0
Identification of five-year review team members (as appropriate)	Section 4.0
Outline of components and schedule of your five-year review	Section 4.0
Community Involvement	Section 4.0
Community notification (prior and post review)	Section 4.0
Other community involvement activities (e.g., notices, fact sheets, etc., as appropriate)	Section 4.0
Document review	Section 4.0
Data review	Section 4.0
Site inspection	Appendix A
Inspection date	Appendix A
Inspection participants	Appendix A

Required Item	Location in Document
Site inspection scope and procedures	Appendix A
Site inspection results, conclusions	Appendix A
Inspection checklist	Appendix A
Interviews	Appendix B
Interview date(s) and location(s)	Appendix B
Interview participants (name, title, etc.)	Appendix B
Interview documentation	Appendix B
Interview summary	Appendix B

Technical Assessment (Site 19, BW OU)

Question A: Is the remedy functioning as intended by the decision documents?	Section 5.2.2
remedial action performance (i.e., is the remedy operating as designed?)	Section 5.2.2
system operations/O&M	Section 5.2.2
cost of system operations/O&M	Section 5.2.2
opportunities for optimization	Section 5.2.2
early indicators of potential issues	Section 5.2.2
implementation of institutional controls and other measures	Section 5.2.2
Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?	Section 5.2.2
changes in standards, newly promulgated standards, TBCs	Section 5.2.2
expected progress towards meeting RAOs	Section 5.2.2
changes in exposure pathways	Section 5.2.2
changes in land use	Section 5.2.2
new contaminants and/or contaminant sources	Section 5.2.2
remedy byproducts	Section 5.2.2
changes in toxicity and other contaminant characteristics	Section 5.2.2
risk recalculation/assessment (as applicable)	
Answer Question C: Has any other information come to light that could call into question the protectiveness of the remedy?	Section 5.2.2
new or previously unidentified ecological risks	Section 5.2.2
natural disaster impacts	Section 5.2.2
any other information that could call into question the protectiveness of the remedy	Section 5.2.2
Technical Assessment Summary	Section 5.2.2

Required Item	Location in Document
Issues (Groundwater Component, CBA OU)	
Issues identified during the technical assessment and other five-year review activities	Section 5.2.2
Determination of whether issues affect current or future protectiveness	Section 5.2.2
A discussion of unresolved issues raised by support agencies and the community (States, Tribes, other Federal agencies, local governments, citizens, PRPs, other interested parties), if applicable	Section 5.2.2
Recommendations and Follow-up Actions (Site 19, BW OU)	
Required/suggested improvements to identified issues or to current site operations	Section 5.2.2
Note parties responsible for actions	Section 5.2.2
Note agency with oversight authority	Section 5.2.2
Schedule for completion of actions related to resolution of issues	Section 5.2.2
Protectiveness Statement (Site 19, BW OU)	
Protectiveness statement for the BW OU	Section 5.0
Comprehensive protectiveness statement covering all of the remedies at the site (if applicable)	Section 5.0
Next Review (Site 19, BW OU)	
Expected date of next review	Section 6.0
If five-year reviews will no longer be done, provide a summary of that portion of the technical analysis presented in the report that provides the rationale for discontinuation of five-year reviews	Section 6.0

THIS PAGE INTENTIONALLY LEFT BLANK

Executive Summary

This report provides the second statutory five-year review for the Central Base Area (CBA) Operable Unit (OU) at the former Norton Air Force Base (AFB) in San Bernardino County, California. This review was conducted in accordance with the draft *Comprehensive Five-Year Review Guidance* issued by the United States Environmental Protection Agency (US EPA 2001). Such a review is required when one or more sites have hazardous substances, pollutants, or contaminants above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The CBA OU is one of only two OUs designated at the former Norton AFB. The other OU is the Basewide (BW) OU. Because this review is focused on the CBA OU, the only sites considered are those which do not meet the UU/UE metric and that are within the CBA OU. In addition, because IRP Site 19 (in the BW OU) was covered under an Interim ROD completed in 1997, and has not yet had a 5-year review, it is also evaluated in this report. A brief summary of the status of other sites investigated in both OUs is also provided in Section 3 of this report, but only as summary or background information.

Central Base Area Operable Unit

The CBA OU is comprised of IRP Site 9 and three other components (not specified as Areas of Concern (AOCs) or IRP sites in the CBA OU ROD) that are associated with the CBA portion of the former base. The three components are: (1) the trichloroethylene (TCE) groundwater plume, (2) deep soil contamination in the area of MW-90 and Building 763, and (3) shallow soil at Building 658 and Building 673. The primary contaminant of concern at IRP Site 9 and the three components is TCE, though there are other contaminants of concern, such as other volatile organic compounds (VOCs) and chromium at IRP Site 9.

The last 5-year review concluded that the remedial actions implemented at IRP Site 9 and two components, deep soil contamination in the area of MW-90 and Building 763, and shallow soil at buildings 658 and 673, attained cleanup levels allowing for UU/UE. The U.S. Environmental Protection Agency (EPA), State of California Department of Toxic Substances Control (DTSC), and the Santa Ana Regional Water Quality Control Board (Region 8) all concurred with this assessment. The remedy for the BB OU is expected to be protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risks are being controlled. Only the TCE groundwater plume has not reached the UU/UE condition, and thus it is the focus of the current review.

The results of this five-year review indicate that the remedies implemented for the groundwater plume are protective of human health and the environment. These remedies continue to function as designed and were operated and maintained in an appropriate manner. No deficiencies impacting the protectiveness of the remedies were noted during this review. Since the CBA OU ROD was signed, the Air Force and regulatory agencies have recognized that institutional controls (ICs) and land use controls are an

important part of any remedy where waste is left in place above unrestricted levels. For Base Realignment and Closure (BRAC) properties, these ICs take the form of deed restrictions that "runs with the land." For the CBA groundwater plume, the specific IC is a lease or deed restriction that prohibits the installation of groundwater extraction wells on former Norton AFB property that overlays the plume. This IC has been implemented at all effected Norton AFB parcels.

IRP Site 19, IROD

Site 19 is the only site in the BW OU that is currently under any type of ROD, in this case an IROD (U.S. Air Force 1997b). The one chemical of concern above UU/UE at Site 19 is polychlorinated biphenyls (PCB). The results of this five-year review indicate that the interim remedies implemented for IRP Site 19, which are concrete cover maintenance and ICs, are protective of human health and the environment. The IC for site 19 is the prohibition of residential use of the property. These remedies are in place in the form of lease restrictions that prohibit the removal of the concrete aircraft apron and restrict the use of the property to airport use. The property will be transferred by deed after the BW ROD is signed and the final remedies are in place.

Basewide Operable Unit

The BW OU consists of 21 sites (IRP Sites 1-8 and 10-22), 73 Areas of Concern (AOC), the Small Arms Range (SAR), Building 752, and the Northeast Base Area (NBA) plume. The remedies at the BW OU are not yet finalized, though the final BW OU ROD due for signature in September 2005. Sites and AOCs in the BW OU requiring cleanup have been addressed through a Base Closure Team (BCT) approved removal action program. No action or no further action (i.e., attainment of UU/UE) is recommended at all but five (5) sites and AOC. Table 3-4 summaries the references, and proposed remedies for the BW OU sites and AOCs.

TABLE OF CONTENTS

EXECUTIVE SUMMARY ix
LIST OF ACRONYMS xiii
FIVE-YEAR SUMMARY FORM xv
1.0 INTRODUCTION 1
2.0 SITE CHRONOLOGY 5
3.0 BASE BACKGROUND 9
3.1 Location 9
3.2 Population 9
3.3 Land Use 9
3.4 Climate 10
3.5 Geology and Hydrology 10
3.6 Soil 12
3.7 Surface Water and Wetlands 12
3.8 Water Use and Well Inventory 13
3.9 Site Locations and Activities 13
3.10 Operable Units and Sites/Areas of Concern 21
3.11 Indoor Air Quality 35
4.0 REMEDIAL ACTION 37
4.1 CBA OU – Component 1, Groundwater 37
4.2 BW OU – IRP Site 19 44
5.0 PROTECTIVENESS STATEMENT 47
5.1 CBA OU 47
5.2 BW OU 48
6.0 NEXT FIVE-YEAR REVIEW 51
7.0 REFERENCES 53

APPENDICES

Appendix A Site Inspection Forms A-1
Appendix B Interview Forms B-1
Appendix C Regulatory Agency Review Letter C-1
Appendix D Comment/Response Matrix D-1

LIST OF FIGURES

1-1 Location of Norton AFB 2
1-2 Norton AFB Operable Units 3
3-1 Locations of Monitoring and Production Wells 14
4-1a Groundwater Plumes 1998-2001 42
4-1b Groundwater Plumes 2002-2004 43

LIST OF TABLES

2-1 General Chronology 6
3-1 Local Population 10
3-2a Active Groundwater Production Wells 15
3-2b Groundwater Monitoring Well Status, Norton Air Force Base 16
3-3 Summary of Site Activities and Conclusions in the CBA OU 23
3-4 Summary of Site Activities and Conclusions in the BW OU 24
4-1 Former Norton AFB Reuse Status 40
4-1a Groundwater Plumes 1998-2001 42
4-1b Groundwater Plumes 2002-2005 43

LIST OF ACRONYMS

ADD	average daily dose
AFB	Air Force Base
AM	Action Memorandum
AOC	Area of concern
ARAR	applicable or relevant and appropriate requirements
BCT	BRAC Cleanup Team
BFI	Browning Ferris Industries
bgs	below ground surface
BMO	Ballistic Missile Organization
BRAC	Base Realignment and Closure
BTEX	Benzene, toluene, xylenes (total), ethybenzene (fuel additives)
BW	Basewide
BWFS	Basewide Feasibility Study
BWPP	Basewide Proposed Plan
CBA	Central Base Area
CCR	California Code of Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	contaminant of concern
CRP	Community Relations Plan
CS	confirmation study
CWA	Chemical warfare agent
DCA	Dichloroethane
DCB	Dichlorobenzene
DCE	Dichloroethylene
DTSC	Department of Toxic Substances Control
EE/CA	Engineering evaluation/cost assessment
EPA	Environmental Protection Agency
ERA	ecological risk assessment
ESI	Expanded source investigation
FAA	Federal Aviation Administration
FFA	Federal Facility Agreement
FS	Feasibility study
GCA	Golf Course Area
GW	Groundwater
HHRA	human health risk assessment
HI	hazard index
HQ	hazard quotient
IC	Institutional controls
IRIS	Integrated risk information system
IRP	Installation Restoration Program
IVDA	Inland Valley Development Agency
IWTP	Industrial waste treatment plant
LADD	lifetime average daily dose
LUC	Land Use Control
MCL	maximum contaminant level
mg/dL	micrograms per deciliter

mg/kg	milligrams per kilogram
MW	Monitoring well
NBA	Northeast Base Area
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFA	No further action
NFRAP	No further response action planned
ng/kg	Nanograms per kilogram
NPL	National Priorities List
O&M	Operation and maintenance
OU	Operable Unit
PAHs	Polycyclic aromatic hydrocarbons
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethene
pCi/g	picoCuries per gram
PEF	potency equivalency factor
PRG	preliminary remediation goal
RA	remedial action
RAB	Restoration Advisory Board
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RfD	reference dose
RI	remedial investigation
RI/FS	remedial investigation/feasibility study
ROD	Record of Decision
RWQCB	Regional Water Quality Control Board
SAR	Small arms range
SARA	Superfund Amendments and Reauthorization Act
SBIAA	San Bernardino International Airport Authority
SF	Slope factor
SVE	Soil vapor extraction
SVOC	Semivolatile organic compounds
SWAP	Satellite waste accumulation point
TBC	To be considered
TCA	Trichloroethane
TCDD	Tetrachlorodibenzo-p-dioxin
TCE	Trichloroethene
TEF	toxic equivalency factors
TMV	toxicity, mobility, volume
µg/L	micrograms per liter
UCL95	95% upper confidence limit
USAF	United States Air Force
USFWS	U.S. Fish and Wildlife Service
UST	Underground storage tank
VOCs	Volatile organic chemicals

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name (*from WasteLAN*): Norton Air Force Base		
EPA ID (*from WasteLAN*): CA4570024345		
Region: 9	**State:** CA	**City/County:** San Bernardino, San Bernardino
SITE STATUS		
NPL status: [X] Final [ ] Deleted [ ] Other (specify)		
Remediation status (all that apply): [ ] Under Construction [X] Operating [ ] Complete		
Multiple OUs? [X] Yes [ ] No	**Construction completion date:** N/A	
Has site been put into reuse? [X] Yes [ ] No (to a limited extent)		
REVIEW STATUS		
Lead agency: [ ] EPA [ ] State [ ] Tribe [X] Other Federal Agency.		
Author name: Derrick Coleman		
Author title: Project Manager	**Author affiliation:** Earth Tech, Inc.	
Review period: 05 / 06 / 2005		
Date(s) of site inspection: 05 / 06 / 2005		
Type of review: [X] Post-SARA [ ] Pre-SARA [ ] NPL-Removal only [ ] Non-NPL Remedial action site [ ] NPL State/Tribe lead [ ] Regional discretion		
Review number: [ ] 1 (first) [X] 2 (second) [ ] 3 (third) [ ] Other, specify:		
Triggering action: [ ] Actual RA On-site construction at OU [ ] Actual RA start at OU [ ] Construction completion [X] Previous Five-Year Review Report [ ] Other, specify: _____		
Triggering action date (*from WasteLAN*): 10 / 27 / 1999		
Due date (*five years after triggering action date*): 10 / 27 / 2004		

"OU" refers to "Operable Unit."

Five-Year Review Summary Form, cont'd.

Issues
Summarize issues (see Chapter 3). CBA OU (OU-2): Groundwater and soil contamination from TCE and other chlorinated hydrocarbons. BB OU (OU-1): Primarily soil contamination from a variety of chemicals, but some minor groundwater contamination problems as well.
Recommendations and Follow-up Actions
Summarize recommendations and follow-up actions (see Chapter 3). CBA OU (OU-2): Continue to monitor groundwater in accordance with the Water Supply Contingency Policy, and maintain effective implementation of institutional controls. BB OU (OU-1): Obtain approval for the Basewide ROD and continue to implement the remedies outlined in that document., with the ultimate objective of closure of all sites in this OU.
Protectiveness Statement(s)
Include individual operable unit protectiveness statements. For sites that have reached construction completion and have more than one OU, include an additional and comprehensive protectiveness statement covering all of the remedies at the site (see Chapter 4). CBA OU (OU-2): The remedy at the site currently protects human health and the environment because exposure pathways that could result in unacceptable risks are being controlled. However, in order to insure long-term protectiveness, the remedy must include implementation of institutional controls that remain in force for the duration. BB OU (OU-1): The remedy at the BB OU is expected to be protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risks are being controlled.
Other Comments
Make any other comments here. None

1.0 Introduction

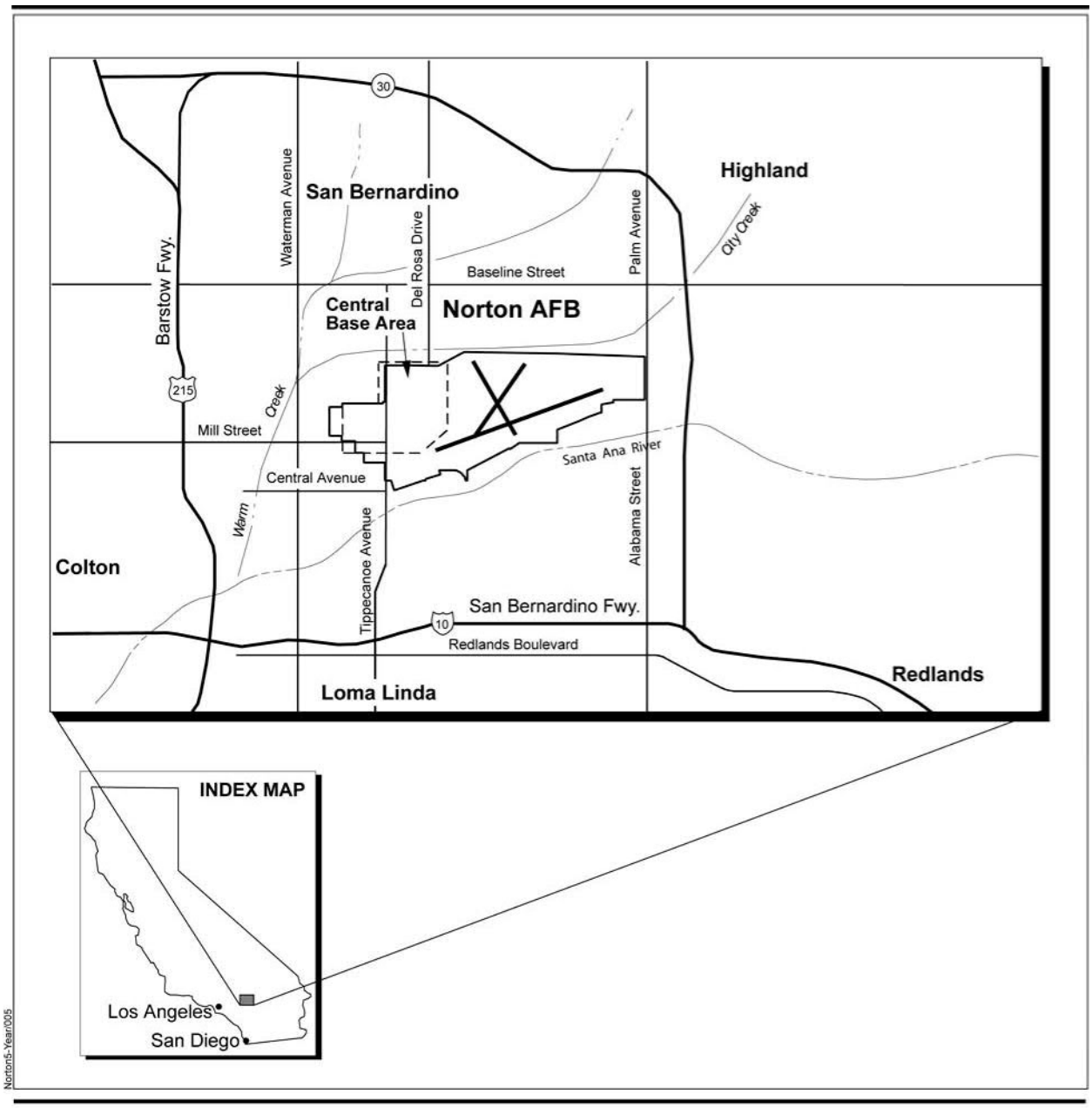
The Air Force Center for Environmental Excellence (AFCEE) directed Earth Tech, Inc. (Earth Tech), to perform the second five-year review of the remedy implemented for the Central Base Area (CBA) Operable Unit (OU) at the former Norton Air Force Base (AFB) in San Bernardino County, California (Figure 1-1). The review was conducted from June 2004 to June 2005. This report documents the results of the review.

The CBA OU is one of two OUs identified at the former Norton AFB; the Basewide OU is the other. The CBA OU is concerned with the contaminated groundwater plume that originated in the CBA portion of the base, and the various sources of this contamination. Investigation and remediation in this OU, therefore, focused on the shallow and deep soils in the vicinity of Buildings 658, 673, and 763, and the plume of contaminated groundwater that resulted from the soil sources. The plume extended from this source area in a southwesterly direction to a maximum extent of several thousand feet outside of the base boundary.

In contrast, the Basewide OU encompasses the entire footprint of the base, and is concerned primarily with surface and near surface contamination of various types. As a result of these definitions of OU extent, there is some overlap in the boundaries of these two OUs (see Figure 1-2). The distinction between the two OUs is that the groundwater contaminant plume (one of four components of the CBA OU) is primarily at depths greater than about 70-80 feet below ground surface (bgs). The Basewide OU coverage in the overlapping area is at the surface or depths generally shallower than 50 feet bgs.

The purpose of five-year reviews is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of such reviews are documented in five-year reports. In addition, five-year review reports identify deficiencies found during the review, if any, and propose recommendations to address them. The first five-year review was completed in 1999 (U.S. Air Force, 1999).

This 5-year review is triggered by the completion of the first 5- year review in 1999; however, the scope of the review is not limited to the sites within the CBA OU. This 5-year review examines all IRP sites (and AOCs) within the installation including those included within the Basewide ROD currently under review. No protectiveness determination is made regarding those sites where a response action has not been taken, but all sites where a removal or remedial action has been taken are assessed. For some sites, a determination can be made that the response is protective in the short term, and long term protectiveness will be provided by Institutional Controls to be selected and implemented. The focus of the actual review process is on those sites that still have contaminants above the accepted standards for each specific contaminant. The only site that meets this criteria in the CBA is the groundwater plume containing solvents, also referred to in this document as the “groundwater component.” In addition, Site 19 (Basewide OU) is also reviewed. It has been carried under an Interim Record of Decision (ROD), or IROD, which will be finalized in the Basewide ROD. This is Site 19’s first five-year review.



Location of Norton AFB

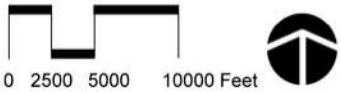
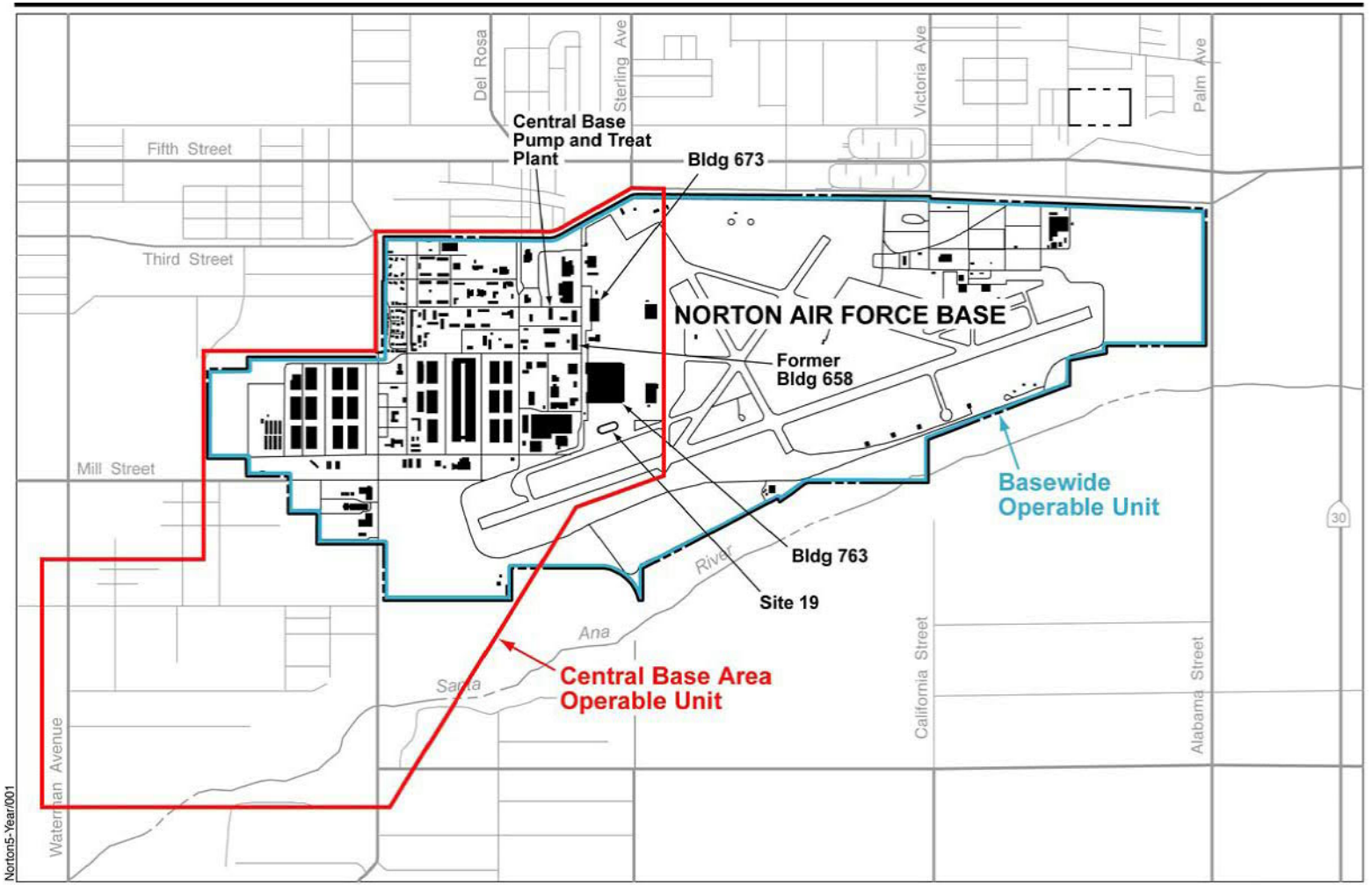


Figure 1-1



EXPLANATION

0 500 1000 2000 Feet

Norton AFB Operable Units

Figure 1-2

This review is required by statute. The U.S. Environmental Protection Agency (EPA) must implement five-year reviews consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). CERCLA §121 (c) as amended, states:

> "If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented."

The NCP part 300.430(f)(4)(ii) of the Code of Federal Regulations (CFR) states:

> "If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action."

The triggering action for this second five-year review is the date of completion of the last (which was also the first) five-year review. Due to the fact that hazardous substances, pollutants, or contaminants remain in the CBA OU at the former Norton AFB above levels that allow for unrestricted use and unlimited exposure, a five-year review is required. However, because this is true only for the groundwater contaminant plume component (one of four components identified for the CBA OU in the last five-year review), this review only considers that component in depth.

The technical assessments performed during this five-year review examined the following questions:

Question A	Is the remedy functioning as intended by the decision documents?
Question B	Are the assumptions used at the time of the remedy still valid?
Question C	Has any other information come to light that could call into question the protectiveness of the remedy?

To answer these questions, the five-year review team performed the following:

- Reviewed applicable site documents such as RODs, remedial action design documents, and site operations and maintenance (O&M) records and reports
- Reviewed newly promulgated standards and applicable or relevant and appropriate requirements (ARARs)
- Interviewed site managers, O&M staff, and local regulatory authorities
- Performed site inspections including general site inspections
- Reviewed system operations and institutional or access controls.

Upon completion of the document reviews, interviews and site inspections, conclusions of the five-year review were developed. These conclusions are intended to evaluate remedy deficiencies (if applicable), recommendations for follow up actions, and a determination of whether the remedy is or is not expected to be protective of human health and the environment.

2.0 Site Chronology

Military operations at Norton AFB began in 1942, providing aircraft maintenance and repair services. After World War II, the base expanded operations to include maintenance, storage, and logistics support for various missile programs. From 1966 until base closure in 1994, the main operation at Norton AFB was the 63rd Military Airlift Wing (63 MAW). The primary function of the 63 MAW was to provide immediate airlift and sustenance capabilities for air and ground combat units worldwide. In 1968, the Aerospace Audiovisual Services established its headquarters at the base. In 1989, Norton AFB was identified as one of several military bases scheduled for closure by the Department of Defense (DOD). Norton AFB officially closed on March 31, 1994, and since that time, a majority of the base property has either been transferred or leased to local entities for commercial purposes, including a public airport, aircraft maintenance, cargo handling, warehousing, office park development, and a golf course.

The activities related to identification, assessment, and remediation of environmental contaminants at the former Norton AFB are provided in Table 2-1. Identification and investigation of contamination and contaminant sources began in the early 1980s and continued through the mid-1990s. Remedial actions began in the early 1990s with implementation of a pilot study at the CBA pump and treat (PAT) system. Active treatment of groundwater contamination continued until May 2002 when the CBA PAT system went offline permanently. In the interim, contaminated soils were remediated by excavation and removal for disposal or for treatment. Groundwater treatment reached a peak with the operation of two PAT systems (one near the source area and the other at the base boundary) from March 1995 to March 1999.

All of the 21 Installation Restoration Program (IRP) Sites, the 73 Areas of Concern (AOCs), the Small Arms Range (SAR), Building 752, and the Northeast Base Area (NBA) Groundwater Plume have been investigated and all remedial actions completed prior to January 2005. Sites 7, 10, 17, AOC 33, and Building 752 are in the process of being closed. Operation, maintenance, and groundwater monitoring of IRP Site 2, the former base landfill, is ongoing.

Site 9 and AOCs 24, 43, and 71 were remediated under the 1993 CBA OU ROD.

Table 2-1. General Chronology

Date	Event
October 1982	Phase I Records Search Report identified potential contamination at 20 Installation Restoration Program (IRP) sites
July 1985	Phase II Problem Confirmation Study investigated 15 of 20 identified IRP sites, and found contamination at seven sites, and TCE in groundwater
July 1987	Norton AFB placed on the U.S. Environmental Protection Agency's (EPA's) National Priorities List (NPL) due to TCE in the groundwater
September 1987	Phase II Confirmation/Quantification, Stage 2 Final Report investigated 18 of the 20 identified IRP sites and two additional IRP sites were identified
September 1988	Maximum concentration of 4,630 micrograms per liter (µg/L) TCE was detected in groundwater from MW-90, area suspected as TCE source
December 1988	Norton AFB issued a Stage 3 Final Report that investigated 21 of the 22 IRP sites
June 1989	Air Force signed the Norton AFB Federal Facility Agreement
April 1990	Norton AFB formally designated the contaminated groundwater in the CBA and any contributing soil sources as the CBA OU
November 1990	Norton AFB began the CBA Groundwater Investigation to define the extent of the TCE groundwater plume
March 1991	Construction of the CBA Pump-and-Treat (PAT) System began as a treatability test to evaluate the groundwater PAT technology
June 1991	TCE source investigation to locate and characterize soil sources that have contributed to the TCE in groundwater
July 1991	Lockheed completed removal action of approximately 4,200 cubic yards of soil containing TCE from Docks 3 and 4 in Building 763 and treated on site. Building 763 was an identified TCE source area
February 1992	Draft remedial investigation (RI) report issued (CBA Groundwater and TCE Source Investigation). On-base plume was characterized, and four TCE soil source areas identified: MW-90 Area, Bldg 658, IRP Site 9, and Bldg 763
April 1992	Draft CBA OU Feasibility Study (FS) and draft Proposed Plan issued
June 1992	Full monitoring of the CBA TCE plume began
	Pilot Study to assess the potential for a pump and treat groundwater system began
	Treatability testing of the groundwater began with the Base Boundary (BB) PAT System, as did characterization of the off-base portion of the plume
August 1992	Air Force, U.S. EPA, and the Cal EPA entered into dispute resolution over the FS
September 1992	Air Force announced its intent to install an extraction system at the BB to impede further migration of the contaminated groundwater off base
January 1993	Air Force, U.S. EPA, and Cal EPA agreed to formally resolve remaining disputes in ROD after finalizing the FS and the Proposed Plan
February 1993	Final FS and Proposed Plan issued
August 1993	Initial Water Supply Contingency Policy was issued.
November 1993	The Record of Decision (ROD) for the CBA Operable Unit (OU) is signed by the RPMs
January 1994	Remedial design activities commenced
October 1994	Remodel of pilot project and construction of CBA PAT system began

Table 2-1. General Chronology

Date	Event
December 1994	Remedial design was completed, a report was issued, design drawings prepared, and specifications provided for the construction of the CBA PAT system.
January 1995	Removal of groundwater contamination is initiated with the CBA PAT System
March 1995	Removal of groundwater contamination is initiated with the BB PAT System
August 1995	Water Supply Contingency Policy updated
April 1996	Final close-out report for the shallow soil removal at Site 9 and Building 658.
July 1996	Certification that the CBA OU treatment system is operating properly and successfully (OPS) is issued for the ROD
July 1997	Interim ROD finalized for Site 19.
October 1997	Final close-out report for Buildings 673 and 763 TCE Source Area SVE activities
March 1999	Initial shut-down of CBA PAT system
October 1999	Initial Five Year Review Report was finalized
April 2000	Initial shut-down of BB PAT system
April 2000	CBA PAT system operations resumed
April? 2001	BB PAT system operations resumed
November 2001	Last shut-down of the BB Treatment System occurs
May 2002	Last shut-down of the CBA Treatment System occurs
September 2002	Water Supply Contingency Policy updated
October 2004	Permit approval for installation of test TCE removal (Raub 5) by County of Riverside
January 2005	Review of site closure status and documentation of pending document and decontamination work still outstanding

THIS PAGE INTENTIONALLY LEFT BLANK

3.0 Base Background

3.1 Location

The former Norton AFB is situated in the north-central portion of the San Bernardino valley area, approximately 65 miles east of Los Angeles, California (see Figure 1-1). The San Bernardino valley is one of the major alluvial valleys of the South Coastal Basin of California. The former Norton AFB is situated on an alluvial terrace on the north bank of the Santa Ana River, approximately 2 miles south of the City of San Bernardino. The base is situated at 117º (degrees) 15' (minutes) longitude and 34º 6' latitude in Township 1 South, Range 4 West (Sections 11, 12, 13, and 14), and Township 1 South, Range 3 West (Sections 7, 18, and 19). Other adjacent cities include Redlands, Loma Linda, Colton, Rialto, and Highland. Another nearby city, Riverside, is important not only because it is the largest in the Inland Empire, but also because it derives some of its water supply from wells located just downgradient from the former base.

Norton AFB is comprised of approximately 2,000 acres bounded by the Santa Ana River on the south, Third Street to the north, Lena Road to the west, and Alabama Street to the east. Two off-site "annexes" include a 1.5-acre parcel southwest of the base, which was used as a navigational marker, and a 30-acre parcel north of the northeast portion of the base, which was used for base housing. Property transfers of parcels of the former base are being administered by the Air Force Real Property Agency (AFRPA). All of the base property has been transferred to the community except 255 acres.

3.2 Population

The population count of San Bernardino County provided by the 2000 U.S. Census was 1,709,434 persons. However, San Bernardino County covers a large area, and the population associated with cities adjacent to (or nearby) the former Norton AFB is a fraction of the total population of the county. The largest cities surrounding the former base, and their recent populations, are provided in Table 3-1 (U.S. Census Bureau 2003). The total population of the communities surrounding the former Norton AFB is about a quarter (27.1%) of the total population of San Bernardino County.

3.3 Land Use

Before closing in 1994, the land use at the former Norton AFB was classified as a mixture of residential and light industrial. In addition to the residential areas, maintenance facilities, warehouses, and administrative centers were located on base. The residential areas of the former base no longer function as residential areas. The runways, taxiways, and other aircraft support facilities are part of the San Bernardino International Airport, although the land use is classified as commercial and services according to the 2001 land use map (SCAG 2004). The 2001 land use map shows that more than half the land to the north and west of the former base is considered residential area, with smaller amounts of vacant land, and commercial and service land, and very small amounts of industrial and agricultural land. South and

Table 3-1. Local Population

City	Population	Percent of County Population
Colton	47,662	2.9%
Highland	44,605	2.7%
Loma Linda	18,681	1.1%
Redlands	63,591	3.8%
Rialto	91,873	5.5%
San Bernardino	185,401	11.1%

Source: U.S. Census Bureau 2003

east of the former base, the predominant land use is agricultural, with a large amount of vacant land (mostly the Santa Ana River bed), and very small amounts of industrial and residential land uses.

3.4 Climate

The San Bernardino Valley (also the upper Santa Ana River watershed), lies in an area of Mediterranean climate with a rainy season lasting from approximately November through April, and a dry season from May to October. Almost 90% of the average annual precipitation in San Bernardino falls during the rainy season, while the remaining 11% occurs during the dry season. Average annual precipitation at San Bernardino has been measured at 15.7 inches during the period from 1951 to 1980. The average high temperature ranges from a minimum of 66.4ºF in January to a maximum of 97.6º F in July, while the average low temperature ranges from 39.4º F in January to 61.2º F in August. Generally the winds are from the west to northwest and average about 3 knots. However, during Santa Ana conditions (high pressure inland), winds from the east can easily gust to over 65 knots (Ruffner 1985).

3.5 Geology and Hydrology

The geological setting of Norton AFB is typical of a fault-controlled alluvial basin environment. The sediments underlying Norton AFB consist of unconsolidated, relatively undisturbed gravels, sands, silts, and clays in varying proportions. While the specific depositional setting across Norton AFB varies considerably from one location to another, sediments can be grouped into various lithologic sets. These lithologic sets occur within the regional upper hydrogeologic units (river channel deposits, younger alluvium, older alluvium).

The western half of the base contains three general lithologic sets:

1. The interval from 0 to approximately 30 feet below ground surface (bgs) is comprised of silts, sands, and gravels with minor amounts of clay. The sands are fine to coarse grained, poorly sorted, and are light yellowish-brown in color. The gravels range in size from 1/8- to 2-inch-diameter granitic rock fragments that are angular to sub-rounded. The gravels and coarser sands tend to be dry, while the finer-grained sands, silts, and clays range from dry to moist.
2. The interval from approximately 30 to 75 feet bgs is comprised of silts, clays, and sands. The sands are very fine grained to coarse grained (typically coarsening downward), moderately to poorly sorted, and range in color from light yellowish-brown to very dark gray. The clays and silts range from loose to very stiff, and are brown to very dark gray in color. Moisture content varies from dry to wet. Locally discontinuous gravel interbeds, approximately 1 to 5 feet thick, also occur. This interval of fine-grained units acts locally as a confining member (the regional upper confining member).
3. The interval from approximately 75 to 200+ feet bgs comprises predominantly sands and gravels, with intercalated 1- to 5-feet-thick silt and clay lenses. The sands are fine to coarse grained, poorly sorted, angular to sub-rounded, and light yellowish-brown to gray in color. Gravels range in size from 1/4 to 3 inches in diameter, are angular to sub-rounded, are poorly to moderately sorted, and are comprised of granitic and gneissic material. This interval makes up what is known as the upper aquifer.

Norton AFB hydrogeology is very similar to the regional hydrogeology. The major hydrologic units investigated within Norton AFB include the upper confining member and the upper aquifer. The middle confining member and deeper units were not encountered during the 1990 to 1993 investigations. The off-base Water Supply Contingency Policy (WSCP) program monitors off-base wells that extend down into the middle aquifer. The hydrologic units investigated correlate well with the regional designations, and are consistent with the lithologic descriptions above.

The uppermost hydrologic unit at Norton AFB is the confining member that overlies the upper aquifer. This confining member correlates regionally with what is known as the upper confining member. This unit appears to be absent in the northeast corner of the CBA and across much of the eastern half of the base. The upper confining member is present in the southwest portion of the base, the industrial waste treatment plant (IWTP), and the golf course area (GCA). In general, the confining member consists of fine-grained clays, silty sands, and sands. The confining member contains more clay in the west portion of the base, and becomes siltier toward the east edge of the unit.

The actual extent of confined water beneath the confining member is variable, depending on recharge and other factors. The confining member locally supports perched water zones that occur from depths between 30 to 60 feet. The clay layers that support the perched water are not laterally continuous, and, locally, there may be one or more perched zones. Perched water zones can only be maintained if

recharge water is available. Many of the perched zone wells that were installed as part of the earlier investigations have gone dry and have been abandoned. Artificial recharge of the perched zone would be expected along the southern part of the base due to irrigation of the golf course. No perched zone wells were installed in the NBA because there is no perched zone in that area.

The upper aquifer extends from depths of approximately 75 feet to depths in excess of 250 feet. Dutcher and Garrett (1963) state that the upper aquifer is approximately 200 to 250 feet thick in the vicinity of Norton AFB. The base of the upper aquifer (i.e., the contact with the middle confining member) does not appear to have been encountered during the investigations. Mud-rotary borings drilled to depths of 300 feet have not penetrated lithologic units that can clearly be identified as representative of the middle confining unit. However, because the contact between the upper aquifer and the middle confining zone is gradational, a clear distinction between the two units cannot easily be made.

The results of groundwater investigations suggest that the upper aquifer should be considered as one hydrologic unit (CDM Federal Programs Corporation, 1993a). Although fine-grained lenses exist within the upper aquifer, they are not laterally extensive, and cannot be used to designate separate units. This is consistent with other interpretations (Mendenhall, 1905; Dutcher and Garrett, 1963; Hardt and Hutchenson, 1980).

To investigate the vertical extent of contamination, monitoring wells have been installed at various "levels" within the upper aquifer (i.e., A-Level, B-Level, C-Level, etc.). Norton AFB groundwater monitoring wells have been installed near the top of the upper aquifer (to investigate the current water table) and at approximate 50-foot intervals below the top of the upper aquifer, using July 1991 groundwater elevations as the basis for establishing the A-level designation. A-level wells were screened at the water table. B-level wells were screened approximately 50 feet below the top of the upper aquifer; C-level wells at 100 feet; D-level wells at 150 feet; E-level wells at 200 feet below the top of the upper aquifer.

3.6 Soil

Surface soils over virtually the entire area of the former base are classified as Tujunga gravelly loamy sand, with a very gently sloping surface (0 to 9 percent). This soil is typically highly permeable (6 to 20 inches per hour) and has a slow to very slow surface runoff rating. These characteristics translate into a low potential for erosion from surface water, but a relatively high susceptibility for wind erosion on unprotected surfaces (Woodruff 1980).

3.7 Surface Water and Wetlands

The former Norton AFB is situated in the upstream end of one of the largest watersheds in Southern California, the Santa Ana River basin. The southern boundary of the former base is coincident with the main channel of the Santa Ana River. Much of the northern boundary is coincident with City Creek, a major tributary to the Santa Ana River whose confluence with the river is west and south of the former base. The general slope of the ground surface, and the direction of flow of these two channels, is to the

southwest. The drainage area of City Creek is north of the former base, while that of the Santa Ana River is east and north of the base. Both watersheds originate in the San Bernardino Mountains. Both channels have only intermittent flows, usually in the wet season, when rainfall is heavy enough and long enough to produce runoff. There are no identified wetlands within the boundaries of the former Norton AFB.

3.8 Water Use and Well Inventory

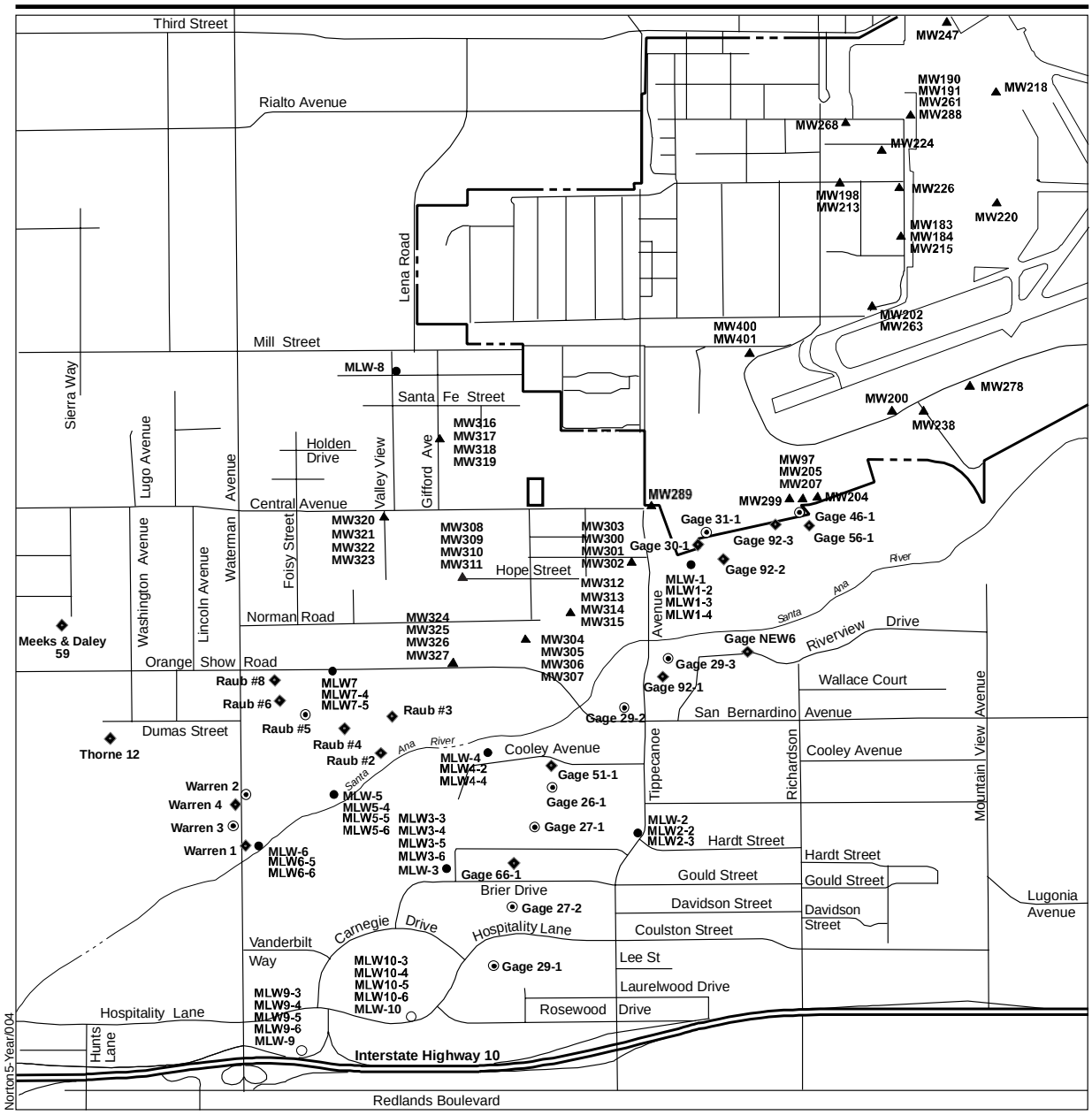
The upper Santa Ana River watershed is one of the fastest growing areas in the country, and supports two (City of Riverside and City of San Bernardino) of the 20 largest metropolitan areas in California. The water supply of this area is a mixture of surface runoff, groundwater, imported water (California Water Project water and Colorado River water), and recycled water. Native groundwater in this basin is augmented through recharge with surface runoff and imported water sources. In the vicinity of the former Norton AFB, several drinking water supply wells in five distinct well fields have been drilled primarily into the middle and lower water-bearing zones (Figure 3-1). The historic well fields in the vicinity of the former base include the following:

1. Gage wells
2. Warren-Thorne complex
3. Raub wells
4. Meeks and Daley well

These historic well fields have provided water supply for the City of Riverside for decades. Basic data on these wells is provided in Table 3-2a. The groundwater monitoring wells installed at the base in association with IRP investigation activities are listed in Table 3-2b.

3.9 Site Locations and Activities

The CBA comprises the western one-third of Norton AFB (see Figure 1-2). In general, aircraft maintenance and repair work were performed in the east portion of the CBA (from the flight line to Del Rosa Drive). Aircraft were stored, prepared for flight, fueled, and repaired along the flight line. Adjacent to the flight line and extending west to Del Rosa Drive are structures that were used for maintaining, overhauling, and washing of aircraft; maintaining vehicles and aircraft-support ground equipment; storage of supplies and other materials; and housing testing facilities, administrative offices, and educational facilities. It is in this portion of the CBA where most of the historical chemical use and disposal activities occurred. The central and west portions of the CBA (between Del Rosa Drive and Tippecanoe Avenue and the western base boundary was comprised of supply warehouses, offices, housing units (single-family residences, apartments, and dormitory-style housing), and other facilities previously used to support Norton AFB's operations. Storage yards and maintenance areas were also situated in this area.



EXPLANATION

- ▲ Monitoring Well Cluster
- ● Multilevel Monitoring Well (MLW) Phase II
- ○ Multilevel Monitoring Well (MLW) Phase III
- ⊙ Production Well Screened < 300 feet (depth)
- ◆ Production Well Screened ≥ 300 feet (depth)
- ▬▬ Norton AFB Boundary

0 500 1000 2000 Feet

Locations of Monitoring and Production Wells

Figure 3-1

Table 3-2a. Active Groundwater Production Wells

Well Field	Well ID	Aquifer	Maximum Capacity (gpm)	Average Production (af/yr.)
Gage	26-1		2,500	2,667
Gage	27-1		2,160	2,329
Gage	27-2		2,340	2,005
Gage	29-1		2,070	2,345
Gage	29-2		2,565	1,540
Gage	29-3		2,835	944
Gage	30-1		1,215	1,015
Gage	31-1		2,115	1,148
Gage	46-1		2,700	2,437
Gage	51-1	Middle	1,660	1,245
Gage	56-1		1,870	1,840
Gage	66-1	Middle	1,890	2,043
Gage	92-1	Middle/Lower	3,015	2,932
Gage	92-2	Middle/Lower	2,900	3,533
Gage	92-3	Middle/Lower	3,195	3,892
Gage	98-1		3,060	2,593
Meeks & Daley	59		2,200	1,548
Raub	2	Middle/Lower	550	57
Raub	3	Middle/Lower	740	158
Raub	4	Middle	2,000	543
Raub	5	Upper/Middle	3,224	3,396
Raub	6	Middle	3,440	2,523
Raub	8	Middle	3,200	2,452
Thorne	12		1,590	1,167
Warren	1		2,200	933
Warren	2	Upper/Middle	1,000	378
Warren	3		400	96
Warren	4		2,100	1,290

af/yr. = acre feet per year
bgs = below ground surface
ft. = feet
gpm = gallons per minute
in. = inches

Table 3-2b. Groundwater Monitoring Well Status, Norton Air Force Base

	Sampling Frequency		
Well Number	**Quarterly**	**Annual**	**Notes**
CBA			
M/EW-11		VOCs(6)	Abandoned April 2005 for Base Redevelopment. Monitoring coverage now will be provided by MW400 and MW 401.
MW80 C			Abandoned May 2005 per 11th Annual GWMP
MW174 A			Abandoned May 2005 per 11th Annual GWMP
MW177 A		VOCs(6)	CBA TCE plume extent well. Abandoned May 2005 for Base Redevelopment. Monitoring coverage now will be provided by MW400 and MW 401.
MW178 A			Abandoned May 2005 per 11th Annual GWMP
MW179 A			Abandoned April 2005 per 11th Annual GWMP
MW180 A	VOCs(6)		CBA PAT decision well, TCE plume definition well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.
MW181 B			Abandoned April 2005 per 11th Annual GWMP
MW182 C			Abandoned April 2005 per 11th Annual GWMP
MW183 A		VOCs(3)	TCE plume definition well
MW184 C	VOCs(1)		CBA PAT decision well, TCE vertical extent well
MW187 A		VOCs(3, 6)	TCE plume definition well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.
MW188 B	VOCs(4, 6)		CBA PAT decision well, TCE plume definition well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.
MW189 C	VOCs(4, 6)		CBA PAT decision well, TCE plume definition well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.
MW190 A		VOCs(3)	TCE/DCE plume definition well
MW191 B	VOCs(1)		CBA PAT decision well,
MW192 A			Abandoned as of 3/30/2004
MW193 B			Abandoned as of 3/30/2004
MW194 A		VOCs(6)	CBA TCE Plume extent well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.
MW195 C		VOCs(6)	CBA TCE plume extent well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.
MW197 A			Water level measurement only
MW198 A		VOCs(3)	TCE plume definition well
MW201 A			Abandoned May 2005 per 11th Annual GWMP
MW202 A		VOCs	CBA TCE plume definition well
MW203 A		VOCs(3, 6)	CBA TCE plume definition well. Abandoned April 2005 for Base Redevelopment. Monitoring coverage now will be provided by MW400 and MW 401.
MW206 B			Abandoned May 2005 per 11th Annual GWMP

Table 3-2b. Groundwater Monitoring Well Status, Norton Air Force Base

Well Number	Sampling Frequency		Notes
	Quarterly	Annual	
CBA (continued)			
MW209 B		VOCs[6]	CBA TCE plume extent well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.
MW210 C			Abandoned May 2005 per 11th Annual GWMP
MW212 A			Abandoned as of 5/19/2003
MW213 B	VOCs[4]		CBA PAT decision well, TCE plume vertical definition well
MW214 B			Abandoned May 2005 per 11th Annual GWMP
MW215 B	VOCs[1]		CBA PAT decision well, TCE plume vertical extent well.
MW218 A		VOCs	Upgradient background well
MW220 A		VOCs	Upgradient background well
MW222 A			Abandoned May 2005 per 11th Annual GWMP
MW224 A	VOCs		CBA PAT decision well, TCE/DCE plume definition well
MW226 A	VOCs		CBA PAT decision well, CBA TCE plume definition well
MW247 B			Upgradient background well – Water level control
MW261 C	VOCs[4]		CBA PAT decision well, CBA TCE plume definition well
MW262 C			Abandoned May 2005 per 11th Annual GWMP
MW263 B	VOCs[1]		CBA PAT decision well, TCE plume definition well.
MW264 B	VOCs[1, 6]		CBA PAT decision well, TCE plume definition well. Abandoned April 2005 for Base Redevelopment. Monitoring coverage now will be provided by MW400 and MW 401.
MW265 A	VOCs[1, 6]		CBA PAT decision well, TCE plume definition well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.
MW268 A	VOCs[4]		CBA PAT decision well, TCE plume definition well
MW274 C			Upgradient background well - Water level control
MW286 D			Abandoned May 2005 per 11th Annual GWMP
MW287 D		VOCs[6]	CBA TCE plume extent well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.
MW288 D			Water level measurements only
MW289 D			BB PAT remedy well, Sample annually
MW291 C	VOCs[4, 6]		CBA PAT decision well, TCE plume vertical definition well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.
MW292 C	VOCs[4, 6]		CBA PAT decision well, TCE plume vertical definition well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.

Table 3-2b. Groundwater Monitoring Well Status, Norton Air Force Base

	Sampling Frequency		
Well Number	**Quarterly**	**Annual**	**Notes**
WSCP – Off-Base			
MW225 C			WSCP well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.
MW266 A			WSCP well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.
MW267 B			WSCP well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.
MW285 D			WSCP well. Abandoned April 2005 for Base Redevelopment. No additional well is needed to replace this monitoring coverage.
MW300 B		VOCs	WSCP well
MW301 C		VOCs	WSCP well
MW302 D		VOCs	WSCP well
MW303 A			WSCP well, Water Level Measurements only (quarterly)
MW304 A		VOCs	WSCP well
MW305 B		VOCs(5)	WSCP well
MW306 D		VOCs(5)	WSCP well
MW307 C		VOCs(5)	WSCP well
MW308 A		VOCs	WSCP well
MW309 B		VOCs	WSCP well
MW310 C		VOCs(5)	WSCP well
MW311 D		VOCs(5)	WSCP well
MW312 A			WSCP well, Water level measurements only (quarterly)
MW313 B		VOCs(5)	WSCP well
MW314 D		VOCs(5)	WSCP well
MW315 C		VOCs(5)	WSCP well
MW316 A			WSCP well, Water level measurements only (quarterly)
MW317 B		VOCs(5)	WSCP well
MW318 C		VOCs	WSCP well
MW319 D		VOCs	WSCP well
MW320 A			WSCP well, Water level measurements only (quarterly)
MW321 B		VOCs	WSCP well
MW322 C		VOCs	WSCP well
MW323 D		VOCs(5)	WSCP well
MW324 A		VOCs	WSCP well
MW325 B		VOCs(5)	WSCP well
MW326 C		VOCs(5)	WSCP well
MW327 D		VOCs(5)	WSCP well
MLW-1		VOCs	WSCP well
MLW-2		VOCs	WSCP well
MLW-3		VOCs(5)	WSCP well

Table 3-2b. Groundwater Monitoring Well Status, Norton Air Force Base

	Sampling Frequency		
Well Number	**Quarterly**	**Annual**	**Notes**
WSCP – Off-Base (continued)			
MLW-4		VOCs	WSCP well
MLW-5		VOCs(5)	WSCP well
MLW-6		VOCs(5)	WSCP well
MLW-7		VOCs(5)	WSCP well
MLW-8			WSCP well, Water Level Measurements only (quarterly)
MLW-9		VOCs	WSCP well
MLW-10		VOCs	WSCP well
GCA			
MW1 P			Abandoned May 2005 per 11th Annual GWMP
MW1R P			Proposed for Abandonment
MW29 P			Abandoned May 2005 per 11th Annual GWMP
MW29R P			Proposed for Abandonment
MW200 A		VOCs	Downgradient IRP Site 1
MW232 A			Abandoned May 2005 per 11th Annual GWMP
MW238 A		VOCs	Downgradient IRP Site 1
MW278 A		VOCs	Upgradient IRP Site 1
MW280 A			Abandoned May 2005 per 11th Annual GWMP
IRP Site 17			
MW20 P		VOCs	IRP Site 17 perched zone
MW63R P		VOCs	IRP Site 17 perched zone
MW97 C		VOCs	Gage Canal Company guard well
MW100 P			Abandoned May 2005 per 11th Annual GWMP
MW101R P		VOCs	IRP Site 17 perched zone
MW109 P		VOCs	IRP Site 17 perched zone
MW152 P		VOCs	IRP Site 17 perched zone
MW154 P		VOCs	IRP Site 17 perched zone
MW204 A			Gage Canal Company guard well
MW205 A		VOCs	Gage Canal Company guard well
MW207 B		VOCs	Gage Canal Company guard well
MW299 A		VOCs	IRP Site 17 downgradient A-Level well
NBA			
MW110 B			Abandoned May 2005 per 11th Annual GWMP
MW113 B			NBA PCE Secondary Plume Well, Sample Annually
MW157 B			Water Level Measurements Only
MW166 A			Abandoned as of 3/30/2004
MW230 A			Abandoned May 2005 per 11th Annual GWMP
MW231 A			Abandoned May 2005 per 11th Annual GWMP

Table 3-2b. Groundwater Monitoring Well Status, Norton Air Force Base

	Sampling Frequency		
Well Number	**Quarterly**	**Annual**	**Notes**
NBA (continued)			
MW233 A			Abandoned May 2005 per 11th Annual GWMP
MW235 A	VOCs/GC		IRP Site 2 landfill closure plan well
MW236 A			Abandoned May 2005 per 11th Annual GWMP
MW239 A			Abandoned May 2005 per 11th Annual GWMP
MW241 A			Abandoned May 2005 per 11th Annual GWMP
MW242 A			Abandoned May 2005 per 11th Annual GWMP
MW243 A			Abandoned May 2005 per 11th Annual GWMP
MW244 A	VOCs/GC		IRP Site 2 closure plan well
MW245 A			Abandoned May 2005 per 11th Annual GWMP
MW246A	VOCs/GC		IRP Site 2 closure plan well
MW248 B			Water Level Measurements Only
MW249B			Abandoned May 2005 per 11th Annual GWMP
MW252A	VOCs/GC		IRP Site 2 closure plan well
MW258 A			Proposed for Abandonment
MW259 A	VOCs/GC		IRP Site 2 landfill closure plan well
MW260 A			Abandoned May 2005 per 11th Annual GWMP
MW269 A			Abandoned May 2005 per 11th Annual GWMP
MW270 A			Abandoned May 2005 per 11th Annual GWMP
MW271 A			Abandoned May 2005 per 11th Annual GWMP
MW272 B			Water Level Measurements Only
MW273 A			Abandoned May 2005 per 11th Annual GWMP
MW275C			Water level measurement only
MW284 A			Abandoned May 2005 per 11th Annual GWMP
MW294A	VOCs/GC		IRP Site 2 closure plan well
MW295 B	VOCs/GC(2)		IRP Site 2 closure Replacement well
MW298 A			Abandoned May 2005 per 11th Annual GWMP

Table 3-2b. Groundwater Monitoring Well Status, Norton Air Force Base

	Sampling Frequency		
Well Number	**Quarterly**	**Annual**	**Notes**

Notes: The 300-series wells and the MLWs are sampled either monthly or quarterly depending on their 6-month average TCE concentration, in accordance with the Air Force's WSCP plan.

(1) = These wells are anticipated to be sampled on this schedule based on the most recent analytical results.
(2) = These wells are to be sampled on this schedule only if the associated paired A-Level well is dry.
(3) = These wells have been dry for since the of the associated system shutdown. They are not included in the decision well set. If water returns to these wells, the sampling schedule should be evaluated according to the TCE concentrations present in the well (i.e., > 2.5 µg/L = quarterly, </= 2.5 µg/L = annually).
(4) = These wells are anticipated to be sampled annually based on the most recent analytical results (i.e., 6 month average > 2.5 µg/L).
(5) = These wells are anticipated to be sampled quarterly based on the most recent analytical results per WSCP.
(6) = These wells were abandoned due to redevelopment of the parcel and will be replaced by a monitoring well cluster located down gradient of the parcel boundary, centered on the present plume configuration.
A = Well screened at the water table relative to 1991 water table elevation.
B = Well screened approximately 50 feet below water table (1991).
C = Well screened approximately 100 feet below water table (1991).
CBA = Central Base Area
D = Well screened approximately 150 feet below water table (1991).
GC = General Chemistry
µg/L = micrograms per liter
MLW = multilevel well
MW = monitoring well
NBA = Northeast Base Area
P = Well screened in a perched zone.
PAT = pump-and-treat
PCE = tetrachloroethylene
SVE = soil vapor extraction
TCE = trichloroethylene
VOC = volatile organic compound
WSCP = Water Supply Contingency Plan

3.10 Operable Units and Sites/Areas of Concern

There are only two OUs that encompass all of the sites identified and investigated under the IRP at the former Norton AFB. As described in Section 1.0, these are the CBA OU and the BW OU. This five-year report is intended to be primarily about the CBA OU. However, a summary of both OUs is provided in this section. In addition, because IRP Site 19 (identified within the BW OU) has been covered under an Interim ROD since 27-July-1997, it is also evaluated in this report. Under the requirements of the five-year review process, only sites that still have contaminants above action levels are evaluated in detail. Therefore, only the groundwater TCE plume of the CBA OU (Component 1) and IRP Site 19 of the BW OU are evaluated in detail in this report.

Central Base Area Operable Unit. The CBA OU is concerned with groundwater contaminated with solvents and related volatile chemicals, primarily TCE. In addition to groundwater contamination, the CBA OU is also concerned with several secondary source locations of TCE in the soil within the CBA. Assessment and remediation have concentrated on four components of environmental contamination:

(1) Groundwater contamination
(2) Deep soil contamination in the vicinity of Buildings 673 and 763

(3) Shallow soil contamination near Buildings 658 and 763
(4) Shallow soil near Building 763 and Site 9 that also contains chromium.

Groundwater contamination is found within the upper aquifer (depths generally ranging from 75 feet bgs to 250 feet bgs). The extent of this contamination has decreased significantly since remedial actions began in 1991, but at one time extended from the TCE source area (near Buildings 658, 673, and 763) across the southwestern corner of the former base. Pumping of contaminated groundwater from the CBA began in March 1991 as a treatability test. The CBA PAT was eventually expanded into a full-fledged treatment system, and a second (downgradient) system (Base Boundary [BB] PAT) was installed near the boundary lines at the southwestern corner of the former base. These systems proved very effective in reducing the size and concentration of the plume. A combination of excavation and removal of contaminated soil, and soil vapor extraction (SVE) treatment have also proven very effective in reducing the secondary sources in the shallow and deep soils within the CBA OU.

As a result of these remedial actions, the only site within the CBA OU that still requires review under the five-year evaluation process is the groundwater TCE plume (also called Component 1). The other sites identified within the CBA OU are identified in Table 3-3, which provides a summary of their proposed remedy and current status.

Basewide Operable Unit. The Basewide OU includes 21 of the 22 IRP sites, all 73 AOCs, the Small Arms Range, Building 752, and the NBA PCE Plume. Actual or potential environmental contamination at these sites generally falls into one of four categories:

- Petroleum hydrocarbons or constituents (BTEX) from fuel spills or leaks
- Volatile organic compounds from solvent spills, leaks, or disposal
- Metals from maintenance facility wastes, plating and other manufacturing operations
- Other miscellaneous constituents (e.g., dioxins, PAHs, PCBs, herbicides, pesticides, radionuclides, etc.).

However, the various investigations performed at these locations showed that most sites do not require remedial actions. Approximately 75% of the sites in the Basewide OU have been recommended for no remedial action because investigations could not identify cause for such action. Remedial actions exercised on the remaining sites included removal actions (generally through excavation), landfill capping, stabilization, SVE, bioremediation, and IC. A summary of the sites in the Basewide OU is provided in Table 3-4 for general background purposes.

The final Basewide OU Record of Decision (ROD) is expected to be completed this month (August 2005). It will outline the proposed remedy for each site identified within that OU. The final publication date of the Basewide OU ROD will also set the measuring point marking the start of the first five-year review period for the Basewide OU. However, as noted earlier, one site within the Basewide OU (IRP Site 19) is already covered by an Interim ROD that was published more than five years ago (U.S. Air Force 1997b). Therefore, this Five-Year Review Report includes a detailed evaluation of the current status of that site

Table 3-3. Summary of Site Activities and Conclusions in the CBA OU

Site ID	References	Proposed Remedy	Current Status[(a)]
IRP Site 9 Electroplating Shop	CDM 2003	The selected remedy for Site 9 was a removal action that included contaminated soils, concrete flooring, wall footings, and electrical conduit encasement. The air ducts at AOC 71 were also removed during the Site 9 removal action and disposed off site. The Air Force concluded that the removal action addressed the contamination, and no further action is required for Site 9.	NFA
Component 1 CBA Groundwater	Earth T 1996 Earth T 2004a USAF 1993a	Background on site activities is provided in the text of Section 4.1 as well as conclusions about the status of the remedial actions conducted.	IC
Component 2 Deep Subsurface Soil TCE Sources adjacent to buildings 673 and 763	USAF 1993a Earth T 1997	The selected remedy was to install a soil vapor extraction (SVE) system to pull air from the soils, treat it using an air sparging system employing activated carbon. This system operated continuously for 19 months (except for routine maintenance) beginning in October 1995. It was shut down in August 1997 and then removed in October 1998.	NFA
Component 3 Shallow Subsurface Soil TCE Sources near buildings 658 and 763	USAF 1993a Earth T 1996	The selected remedy included excavation and removal of TCE containing soils. A total of 350 cubic yards of soils were removed near Building 658, and these were remediated ex-situ in a treatment cell on base to TCE concentrations less than 5 micrograms per kilogram (ug/kg). The remaining TCE-containing soil at Building 763 (which did not also contain chromium) was addressed through the SVE activities described above for Component 2.	NFA

(a) Explanation of Current Status

NA (No Action)	Site or location shows no evidence of contamination, or was determined to have concentrations of contaminants below unrestricted levels, and therefore no action is necessary to be protective of human health and the environment. Methods used to make this determination included one or more of the following: • Records search • Geophysical assessment • Sample collection and analysis
NFA (No Further Action)	Some type of remedial action has been performed at the site or location which has reached an acceptable conclusion. Such a conclusion could be one of the following: (5) Contaminant has been reduced to concentrations below action level(s) and unrestricted use of the site can be allowed. (6) Contaminant has been reduced to concentrations near the action level(s) but cannot be further reduced due to technical impracticability or economic viability. However, because risk is low enough, institutional controls are not necessary and unrestricted use of the site can be allowed.
IC (Institutional Control)	Remedial action has not reduced (or is not expected to be able to reduce) contaminant concentrations below action levels; and risk is high enough to warrant restriction of contact with contaminated media. Therefore, institutional controls have been implemented to provide protection of the local population from exposure.
RIP (Remediation in Progress)	Remedial action is necessary, but it is either: (7) Ongoing (started and not completed) (8) Planned (it has not been started).

Explanation of Acronyms and Abbreviations

CBA = Central Base Area
SVE = Soil vapor extraction
TCE = Trichloroethene

Table 3-4. Summary of Site Activities and Conclusions in the BW OU

Site ID	References	Proposed Remedy	Current Status
IRP Site 1 Industrial Waste Lagoons	Earth T. 2005a	The selected remedy was the excavation and removal of soil from an area of approximately 25,000 square feet, to the top of the perched-zone groundwater at a depth of approximately 29 feet bgs, and disposed off site. The excavation was backfilled with clean soil. Based on confirmation sampling and groundwater monitoring the Air Force concluded that residual contamination does not pose an adverse risk to groundwater quality. Therefore, no further action is required for Site 1.	NFA
IRP Site 3 Waste Pit No. 2	E & E 1987 E & E 1989 CDM 1993c CDM 1995d CDM 1996j	IRP investigations failed to locate the site or any potential contamination in the area. Based on the findings of three investigations, the Air Force concluded that there was no release of contamination1, and no further action is required for Site 3.	NFA
IRP Site 4 Waste Pit No. 1	E & E 1987 E & E 1989 CDM 1993c CDM 1995d CDM 1996j	IRP investigations failed to locate the site or any potential contamination in the area. Based on the findings of these three investigations, the Air Force concluded that there was no release of contamination, and no further action is required for Site 4.	NFA
IRP Site 6 Underground Waste Oil Storage Tanks	Bechtel 1997a Bechtel 1996	The selected remedy included excavation and removal of petroleum contaminated soils to a depth of about 40 feet bgs, backfilling with clean soil, and regrading to become a portion of the parking lot for the San Bernardino International Airport. The Air Force received approval from the RWQCB for the removal action. The Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, which removed the contamination, and no further action is required for Site 6.	NFA
IRP Site 7 IWTP Sludge Drying Beds	CDM 2003	The selected remedy was removal of the former drying beds, including surrounding concrete walls and surface soils. The closure report is in preparation. The Air Force concluded that the removal action addressed the residual contamination, and no further action is required for Site 7.	NFA
IRP Site 8 PCB Spill Area	E & E 1989 CDM, 1993c CDM, 1996h USAF, 1996d Bechtel, 1997b	The selected remedy was removal of contaminated soil, which was completed in November 1996. Cleanup achieved residential soil PRGs for the site area. The Air Force concluded that all contamination in excess of PRGs was addressed by the removal action, which removed the contamination, and no further action is required for IRP Site 8.	NFA
IRP Site 10 Base Landfill No. 1	Earth T 2005a	The selected remedy was removal of dioxin contaminated soil in excess of 10 ng/kg, which was completed in 2004, thus reducing the level of dioxins and residual cancer risk. The closure report is in preparation. The Air Force concluded that this removal action addressed the residual contamination, and no further action is required for Site 10.	NFA
IRP Site 11 Fuel Sludge Drying Beds	CDM, 1993c USAF, 1996d CDM, 2003	During the RI, soil samples were collected from soil pits to identify the presence of sludge waste. Sludge material was not observed in any of the pits, and no COCs were detected above residential PRGs. Thus, the risk assessment indicated no adverse risk for the site. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for Site 11.	NFA

Table 3-4. Summary of Site Activities and Conclusions in the BW OU

Site ID	References	Proposed Remedy	Current Status
IRP Site 12 Waste Pit No. 3	CDM, 1993c CDM, 1995d CDM 1997d CDM, 2000c CDM, 2003 Earth T 2003 Earth T 2004a	The selected remedy was removal and disposal of metals-contaminated soil, completed in March 2004. The Air Force concluded that all contamination in excess of residential PRGs was addressed by this remedy, and no further action is required at Site 12.	NFA
IRP Site 13 IWTP Sludge Disposal Area	E & E 1989 CDM, 1993c Ogden, 1996a USAF, 1996b Ogden, 1996b Ogden, 1997 CDM, 2003	The selected remedy includes excavation and removal of contaminated soil and disposal at the Site 2 landfill, where it was used as a sub-base for the final cover. BWFS concluded that the residual contamination left at Site 13 does not pose a risk to human health. The Air Force concluded that all contamination in excess of residential PRGs was addressed in the 1996 removal action, which removed the contamination, and no further action is required at Site 13.	NFA
IRP Site 14 Waste Pit No. 4	CDM, 1993c Ogden, 1996a USAF, 1996b Ogden, 1997	The selected remedy included excavation and removal of contaminated soils from the site and disposed at the Laidlaw facility in Westmoreland, California. Minor paint waste remains below 18 feet bgs. Because the original risk was acceptable, the Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, which removed the contamination, and no further action is required for Site 14.	NFA
IRP Site 15 UST S-290	E & E 1989 CDM, 1993c USAF, 1996d CDM, 2003	IRP investigations found no evidence of metals, fuels, oils, or grease above residential PRGs. Therefore, the Air Force concluded that contamination should not preclude unrestricted land use, and no further action is required for Site 15.	NFA
IRP Site 16 Air Combat Camera Services Evaporation Basins	E& E 1989 M & K 1996a M & K 1996b CDM, 1993c CDM, 1996k CDM, 1996i Ca DTSC, 2002	The selected remedy involved the removal of the evaporation basins at the ACCS waste treatment facility, and follow-up groundwater monitoring. The Air Force completed its obligations for groundwater sampling, and the site was approved for RCRA closure without controls. The Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, and no further action is required for Site 16.	NA
IRP Site 17 Drummed Waste Storage Area/Waste Fuel and Solvent Sump	Earth T 2005a	The selected remedy for Site 17 was the removal of the waste storage facility, which was accomplished in two phases. The CERCLA closure report is in preparation. The Air Force concluded that the due to the small size of the site (1.0 acre) and the depth of residual soil contamination (30 feet bgs), no further action is required for Site 17.	NFA
IRP Site 18 Aviation Gas Spill Area	CDM, 1993c USAF, 1996d CDM, 2003	During the RI, surface soil samples were analyzed, with PAHs and lead detected at average concentrations, but below the residential PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for Site 18.	NFA
IRP Site 20 Low-Level Radioactive Bunker Burial Site	E & E 1989 CNI 1992 IT Corp 1994 IT Corp 1996 CDM 2003	Investigations for Site 20 included GPR surveys to locate a suspected concrete bunker and exploratory excavations of geophysical anomalies at the golf course. Because a concrete bunker was never encountered the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no action is required for Site 20.	NA

Table 3-4. Summary of Site Activities and Conclusions in the BW OU

Site ID	References	Proposed Remedy	Current Status
IRP Site 21 Underground Ferricyanide Tank	E & E 1989 M & K 1996a M & K 1996b CDM, 1996k CDM, 1996i CDM, 1997c Earth T 2001a DTSC, 2002	The selected remedy for Site 21 was removal of the waste treatment tanks and additional groundwater monitoring of the site location. No COCs were detected above their MCL values during groundwater monitoring, and in October 2000 the site was approved for closure without controls by RCRA. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for Site 21 under CERCLA.	NFA
IRP Site 22 IWTP Discharge Ditch and Outfall Area	Ogden, 1996a USAF, 1996b	The selected remedy for Site 22 was the excavation and mixing of soil containing arsenic from the site for the preparation of road base for the paving Palm Meadows Drive. The resulting assessment was based on an average exposure point concentration of arsenic (the only COC detected), which was below U.S. EPA accepted background average of 5 mg/kg. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for IRP Site 22.	NFA
AOC 1 Building 248, Dry Well Area	Ogden, 1996a USAF, 1996b	Two investigations showed residential soil PRGs were not exceeded for the AOC 1 area overall. Based on these results, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 1.	NA
AOC 2 Building 258, Floor Drains and Exterior Sump	CDM, 1995d CDM, 2003	Investigation of the sumps and adjacent soil showed metals, cyanide, and PAHs at concentrations typically below residential soil PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 2.	NA
AOC 3 Building 295, Automotive Maintenance Shop	CDM, 1995d Bechtel, 1997b CDM, 2003	The selected remedy included cleaning of the sump located at the former vehicle repair/washing facilities, and no further investigation of AOC 3. The sump was cleaned out as part of a series of basewide cleanup actions. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 3.	NFA
AOC 5 Building 302 Aircraft Main-tenance Facility	CDM, 1995d CDM, 2003	Investigation of AOC 5 showed no COCs were detected in any of the soil gas or soil samples. Therefore, the Air Force concluded that there was no release of contamination, and no further action is required for AOC 5.	NA
AOC 6 Buildings 313, 317, and 320	CDM, 1995d CDM, 2003	Investigation of AOC 6 showed no solvent or fuel chemicals in the soil and soil gas samples. No COCs were detected in excess of residential PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 6.	NA
AOC 7 Building 330	CDM, 1995d CDM, 1996c CDM, 2003	Investigation of AOC 7 revealed detectable levels metals and compounds indicative of oil and grease. However, these values did not exceed residential soil PRGs overall. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 7.	NA
AOC 8 Building 337	CDM, 1995d CDM, 2003	Investigation of AOC 8 produced samples in which PAHs and metals were detected below residential soil PRGs. Thus, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 8.	NA
AOC 9 Buildings 333 and 341	CDM, 1995d CDM, 2003	Investigation of AOC 9 showed no COCs were detected above residential PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 9.	NA

Table 3-4. Summary of Site Activities and Conclusions in the BW OU

Site ID	References	Proposed Remedy	Current Status
AOC 10 Building 336	CDM, 1995d CDM, 2003	The selected remedy for AOC 10 was to clean the grease trap associated with Building 336, and properly dispose of its contents. The Air Force then concluded that there was no release of contamination at the site, and no further action is required for AOC 10.	NFA
AOC 11 Building 338	CDM, 1995d CDM, 2003	The investigation for AOC 11 showed all metals detected to be within background range, and the soil pH in the neutral range. Thus, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 11.	NA
AOC 12 Building 344	CDM, 1995d	The investigation of AOC 12 showed through soil sampling and soil gas sampling that no COC constituent levels were detected above residential PRGs. The BWFS concluded that AOC 12 does not pose an adverse risk due to the inhalation pathway. The Air Force therefore concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required.	NA
AOC 13 Building 345	CDM, 1995d	No COC constituent levels were detected above residential PRGs in the investigation of AOC 13 with soil and soil gas sampling. The BWFS concluded that AOC 13 does not pose adverse risk due to the inhalation pathway. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required.	NA
AOC 14 Buildings 405 and 408	CDM, 1995d IT Corp. 1996	Investigation of AOC 14 using soil gas surveys, GPR survey, and exploratory excavations revealed no COCs to be present. Thus the Air Force concluded that there was no release of contamination, and no further action is required for AOC 14.	NA
AOC 15 Building 432	CDM, 1995d CDM, 2003	No detectable COCs were found in the soil sample collected in the investigation of AOC 15. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 15.	NA
AOC 16 Building 435	CDM, 1995d	The investigation of AOC 16 produced no soil gas samples with detectable levels of COCs. Therefore, the Air Force concluded that there was no release of contamination, and no further action is required for AOC 16.	NA
AOC 17 Buildings 441 and 442	CDM, 1995d	No detectable COCs were found in the soil gas samples collected as part of the investigation of AOC 17. The Air Force therefore concluded that there was no release of contamination, and no further action is required for AOC 17.	NA
AOC 18 Buildings 451/452	CDM 2003 Earth T 2005a	Although investigation of AOC 18 indicated the presence of xylene and naphthalene at concentrations exceeding residential PRGs, evaluation of the site in subsequent times projected acceptable direct contact and indoor air inhalation risk. The Air Force concluded that the residual fuel contamination has been reduced to acceptable levels for unrestricted, and no further action is required for AOC 18.	NFA
AOC 19 Buildings 576 and 578	CDM, 1995d CDM, 2003	Investigation of AOC 19 with soil and soil gas sampling revealed limited detectable levels of fuel chemicals. As a result, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 19.	NA
AOC 20 Building 635	CDM, 1995d CDM, 2003	Investigation of AOC 20 showed no COCs were detected in the soil samples above residential PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 20.	NA

Table 3-4. Summary of Site Activities and Conclusions in the BW OU

Site ID	References	Proposed Remedy	Current Status
AOC 21 Building 638	CDM, 1995d	No COCs were detected in the soil and soil gas samples collected in the investigation of AOC 21. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 21.	NA
AOC 22 Building 653	CDM, 1995d CDM, 2003	The investigation of AOC 22 revealed detectable but very low concentrations of Toluene and TCE in only one sample. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 22.	NA
AOC 23 Building 655	CDM, 1995d CDM, 2003	Investigation of ACO 23 included soil and soil gas sample analyses, which found only detectable concentrations of TCE and diesel, although none were above residential PRGs. Based on these results and risk analysis the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 23.	NA
AOC 24 Building 658	CDM, 1995d CDM, 2003	The selected remedy included removal of a sump and TCE-contaminated soil immediately north of Building 658. The Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, and no further action is required for AOC 24.	NFA
AOC 25 Building 678	CDM, 1995d CDM, 2003	Investigation of ACO 25 included soil and soil gas sample analyses, which found only detectable concentrations of PCE in one soil gas sample and no detectable levels of any COCs in the soil samples. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 25.	NA
AOC 26 Building 695	CDM, 1995d	Investigation of AOC 26 showed no detectable levels of any COCs. Therefore, the Air Force concluded that there was no release of contamination, and no further action is required for AOC 26.	NA
AOC 27 Building 705	CDM, 1995d	Investigation of AOC 27 showed no detectable levels of any COCs. Therefore, the Air Force concluded that there was no release of contamination, and no further action is required for AOC 27.	NA
AOC 28 Building 707	CDM, 1995d CDM, 2003	Investigation of AOC 28 found low, but detectable, levels of TCE and diesel. Based on the low levels found, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 28.	NA
AOC 29 Building 723, 724, and 725	CDM, 1995d CDM, 1996c CDM, 2003	Investigation of AOC 29 indicated that a suspected UST had been removed previously and only low levels of benzene, toluene, and xylene were detected. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 29.	NA
AOC 30 Building 726	CDM, 1995d CDM, 2003	Investigation of AOC 30 showed detectable, but low concentrations of fuel chemicals in only one sample. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 30.	NA
AOC 31 Building 736	CDM, 1995d CDM, 2003	Investigation of AOC 31 included soil gas sample analysis and indoor air risk modeling. The BWFS concluded that AOC 31 does not pose a risk to human health due to the inhalation pathway. Therefore, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required.	NA
AOC 32 Building 741	CDM, 1995d	Investigation of AOC 32 did not find any detectable solvents or fuels. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 32.	NA

Table 3-4. Summary of Site Activities and Conclusions in the BW OU

Site ID	References	Proposed Remedy	Current Status
AOC 33 Building 747	CDM 2003 Earth T 2005a	The selected remedy for AOC 33 was the removal of a sump and the surrounding soil, completed in 2003. Post removal investigations found detectable, but not elevated, levels of COCs. Therefore, the Air Force concluded that the residual fuel contamination has been reduced to acceptable levels for unrestricted, and no further action is required for AOC 33.	NFA
AOC 34 Building 749	CDM, 1995d CDM, 2003	Investigation of AOC34 included soil gas sample analysis and indoor air risk modeling. The BWFS concluded that AOC 34 does not pose a risk to human health due to the inhalation pathway. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 34.	NA
AOC 35 Building 755	CDM, 1995d CDM, 2003	Investigation of AOC 35 included soil and soil gas sample analysis and indoor air risk modeling. The BWFS concluded that AOC 35 does not pose a risk to human health due to the inhalation pathway. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 35.	NA
AOC 36 Building 795	CDM, 1995d CDM, 2003	Investigation of AOC 36 did not find any detectable levels of COCs in soil samples and only TCE was detected in the soil gas samples. As a result of these results, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 36.	NA
AOC 37 Refuse Dump Area	CDM, 1995d CDM, 1996c CDM, 1996h USAF, 1996d Bechtel, 1997b	The remedy selected for AOC37 was removal of contaminated soils which was performed from October through December 1996. As a result of this removal action, the Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, which removed the contamination, and no further action is required for AOC 37.	NFA
AOC 38 C Street Storm Drain Outfall	CDM, 1995d CDM, 1996c CDM, 1996h USAF, 1996d Bechtel, 1997b	The remedy selected for AOC38 was removal of contaminated soils which was performed from October through December 1996. As a result of this removal action, the Air Force concluded that all contamination in excess of residential PRGs had been addressed, and no further action is required for AOC 38.	NFA
AOC 39 Golf Course Outfall Area	CDM 2003 Earth T 2005a	Investigation of AOC 39 included soil sample analyses and risk assessment modeling. The final evaluation decided that sample collection locations had biased results, thus leading to an overestimation of the actual risk. Therefore, the Air Force concluded that residual contamination was within acceptable levels for unrestricted land use, and no further action is required for AOC 39.	NA
AOC 40 Golf Course Maintenance Area	CDM, 1995d CDM, 1996c USAF, 1997a Earth T 2004	The remedy selected for AOC40 was removal of metal sheds, floors, foundations, and soils which was accomplished in March 2004. As a result of this removal action the Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, and no further action is required for AOC 40.	NFA
AOC 41 Lockheed Soil Excavation Treatment Cell	McL-H 1991a McL-H 1991b McL-H 1992 CDM, 1995d	Investigation of AOC 41 included sampling of soils within and underlying the treatment cell after use of the cell for treatment was complete. Although TCE had been reported in the soil within the cell during the treatment process, no TCE was detected in any of the post-treatment samples. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 41.	NA

Table 3-4. Summary of Site Activities and Conclusions in the BW OU

Site ID	References	Proposed Remedy	Current Status
AOC 42 Building 514	CDM, 1995d CDM, 2003	Investigation of AOC 42 included soil and soil gas sample analysis and only low levels of VOCs were detected in the soil gas samples. No COCs were detected above residential PRGs in soils. Based on these results, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 42.	NA
AOC 43 Building 763	CDM, 1995d CDM, 2003	The selected remedy included SVE of a large area within the CBA that included Building 763. As a result of the effectiveness of this SVE treatment, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 43.	NFA
AOC 44 Golf Course Ash Layer	CDM, 1996c CDM, 2000b CDM, 2003	The selected remedy was excavation and removal of soils and ash for off site disposal as part of the Sites 10 and 12 remediation. The BWFS identified no further action as the preferred alternative for AOC 44 based on the cleanup of IRP Site 10 (see Figure 2-6). The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 44.	NFA
AOC 45 500-Series Buildings	CDM, 1995d CDM, 2003	The investigation of AOC 45 included soil gas sample analysis and indoor air risk modeling. The BWFS concluded that AOC 45 does not pose a risk to human health due to the inhalation pathway. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 45.	NA
AOC 46 900-Series Buildings	CDM, 1996a USAF, 1996a CDM, 2003	Investigation of AOC 46 included extensive soil gas sampling and analysis and limited follow-up soil sampling. Only 1,1,1-TCA was detected in the soil gas samples and no solvents were detected in the two soil boreholes sampled. As a result of these results, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 46.	NA
AOC 47 Detachment 10	CDM, 1996a	Investigation of AOC 47 included soil and soil gas sample analysis, in which no COCs were detected. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 47.	NA
AOC 48 Former Communication Facility	CDM, 1996a	Investigation of AOC 48 included soil gas sample analysis, in which no COCs were detected. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 48.	NA
AOC 49 Building 248, SWAP	CDM, 1996a	Investigation of AOC 49 included a single soil borehole, form which soil samples showed no detectable VOCs or cyanide present, but did have very low pH. The soil pH was below the neutral range for Norton AFB soils and above pH 2.0, but did not indicate contamination. The Air Force concluded that there was no release of contamination, and no further action is required at AOC 49.	NA
AOC 50 Building 329, SWAP	CDM 1996a CDM 2003	Investigation of AOC 50 included one soil borehole, with samples showing no solvents, fuels, petroleum compounds, PCBs, and metals were detected above residential soil PRGs. As a result, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required at AOC 50.	NA
AOC 51 Building 333, SWAP	CDM 1996a CDM 2003	Investigation of AOC 52 included soil and soil gas samples, and no COCs were detected above residential soil PRGs. Therefore, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 51.	NA

Table 3-4. Summary of Site Activities and Conclusions in the BW OU

Site ID	References	Proposed Remedy	Current Status
AOC 52 Building 341, SWAP	CDM 1996a CDM 2003	Investigation of AOC 52 included soil and soil gas sampling. No COCs were detected above residential soil PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 52.	NA
AOC 53 Building 403, SWAP	CDM 1996a	Investigation of AOC 53 included soil and soil gas sampling. No COCs were detected. Based on these findings, the Air Force concluded that there was no release of contamination, and no further action is required for AOC 53.	NA
AOC 54 Building 407, SWAP	CDM 1996a	Investigation of AOC 54 included soil and soil gas sampling. COCs were not detected. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 54.	NA
AOC 55 Building 412, SWAP	CDM 1996a CDM 2003	Investigation of AOC 55 included soil and soil gas sampling. Although some VOCs were detected in the soil, no COCs were detected in soil above residential PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 55.	NA
AOC 56 Building 417, SWAP	CDM 1996a CDM 2003	Investigation of AOC 56 included soil and soil gas sampling. Acetone and methyl ethyl ketone were reported at low concentrations in soil gas, but no COCs were detected in soil. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 56.	NA
AOC 57 Building 427, SWAP	CDM 1996a	Investigation of AOC 57 included soil sampling, and no COCs were detected. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 57.	NA
AOC 58 Building 468, SWAP	CDM 1996a CDM 1996d CDM 2003	Investigation of AOC 58 included soil and soil gas sampling, and a number of COCs were detected at low concentrations. Only a single detection of benzo(a) pyrene exceeded the residential PRG. However, in the final analysis, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 58.	NA
AOC 59 Building 620, SWAP	CDM 1996a CDM 2003	Investigation of AOC 59 included soil and soil gas sampling. Only acetone and methyl ethyl ketone were reported at low concentrations. As a result, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required at AOCs 59 and 68.	NA
AOC 60 Building 675, SWAP	CDM 1996a CDM 1996d CDM 2003	Investigation of AOC 60 included soil, soil gas and indoor air risk modeling. Although fuels and fuel additives were detected at low concentrations, all detections were below residential soil PRGs. The BWFS concluded that AOC 60 does not pose a risk to human health due to the inhalation pathway. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 60.	NA
AOC 61 Building 680, SWAP	CDM 1996a CDM 2003	Investigation of AOC 61 used soil and soil gas sample analyses to find only low levels of TCE in soil gas, and no detectable COCs in the soil. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 61.	NA

Table 3-4. Summary of Site Activities and Conclusions in the BW OU

Site ID	References	Proposed Remedy	Current Status
AOC 62 Building 825, SWAP	CDM 1996a CDM 1996d CDM 2003	Investigation of AOC 62 included soil sample analyses and found no COC concentrations above residential soil PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 62.	NA
AOC 63 Building 950, SWAP	CDM 1996a CDM 2003	Investigation of AOC 63 showed no COCs detected above residential PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required at AOC 63.	NA
AOC 64 Building 976, SWAP	CDM 1996a CDM 2003	Investigation of AOC 64 used soil sample analysis to find low levels of metals in only 1 of 31 samples and pesticides below residential PRGs. Therefore, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 64.	NA
AOC 65 Delta 7, SWAP	CDM 1996a CDM 2003	Investigation of AOC 64 included soil and soil gas sample analysis to show no COCs in the soil gas, and only metals were detected in the soil, which were within the background range. Therefore, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 65.	NA
AOC 66 Gate 10, SWAP	CDM 1996a CDM 2003	Investigation of AOC 66 used both soil and soil gas sample analysis to show detectable levels of PCE in the soil gas and only metals in the soils (which were within the background range). Therefore, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 66.	NA
AOC 67 Building 763, SWAP	CDM 1996b CDM 2003	Investigation of AOC 67 produced detectable levels of several VOCs. However, this AOC is adjacent to the Building 763 TCE source location, which was subjected to an SVE removal action. The results of that SVE removal action led the Air Force to conclude that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 67.	NA
AOC 68 Building 620, Wash Pad	CDM 1996a CDM 2003	See AOC 59 Description	NA
AOC 69 Chemical Warfare Training Area	CDM 1996b CDM 2003	Investigation of AOC 69 used soil sample analysis to show limited COCs were detectable, and their concentrations were below levels of concern. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is recommended for AOC 69.	NA
AOC 70 IWTP Effluent Percolation Pond	CDM 2003 Earth T 2005a	The remedy selected for AOC 70 was a removal action excavating contaminated soil followed by backfilling with certified clean fill. A subsequent risk assessment demonstrated reduction of contaminants to within acceptable levels. Therefore, the Air Force concluded that due to the small size of residual contamination beneath 3 to 10 feet of fill, no further action is required for AOC 33.	NFA
AOC 71 Building 763, IRP Site 9 Air Ducts	Earth T 1996a	The selected remedy at AOC 71 was removal and off-site disposal of the HVAC air ducts that had become contaminated with a buildup of plating materials which was accomplished as part of the Site 9 removal action. The Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, which removed the contamination, and no further action is required for AOC 71.	NFA

Table 3-4. Summary of Site Activities and Conclusions in the BW OU

Site ID	References	Proposed Remedy	Current Status
AOC 72 Aircraft Refueling Vehicle Wash Pad	CDM, 1996b	Investigation of AOC 72 included soil gas sample analysis which found no detectable levels of any COCs. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 72.	NA
AOC 73 Explosive Ordnance Disposal Training Facility	CDM-AT 1996 CDM-AT 1997	Investigation of AOC 73 was conducted under a special plan to account for the possible presence of explosives and explosives waste. Geophysical surveys and exploratory excavations were used to establish no presence of explosives waste or residual chemicals related to explosives. Because AOC 73 has been cleared for explosives waste, the Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, which removed contamination, and no further action is required for AOC 73.	NA
Building 752 Exterior Pipeline/ Washwater spill Areas	IT Corp. 1999 Earth T 2005a	The selected remedy was excavation and off-site disposal of soils containing radium-226 in excess of 2 pCi/g. This action was begun, but had not been completed by April 2005.	RIP
PCE Plume NBA Groundwater	Earth T 2004a Earth T 2005a	The selected remedy is to not perform any groundwater remediation activities because the concentration of contaminants have decreased through natural attenuation to the point of being protective of human health and the environment.	NA

(a) See footnote "(a)" in Table 3-3 for explanation of Current Status.

Explanation of Acronyms and Abbreviations

AAVS = Air Force Audio Visual Services
ACCS = Air Combat Camera Services
AFB = Air Force Base
AM = Action Memorandum
AOC = Area of concern
AVGAS = aviation gasoline
bgs = below ground surface
BMO = Ballistic Missile Organization
BTEX = Benzene, toluene, xylenes (total), ethylbenzene (fuel additives)
BW = Basewide
BWFS = Basewide Feasibility Study
CBA = Central Base Area
CERCLA = Comprehensive Environmental Response, Compensation and Liability Act
COC = chemicals of concern
CS = confirmation study
CWA = Chemical warfare agent
DCA = Dichloroethane
DCB = dichlorobenzene
DCE = Dichloroethylene
DD = decision document
DRMO = Defense Reutilization and Marketing Office
DTSC = Department of Toxic Substances Control
EE/CA = engineering evaluation/cost analysis
ESI = expanded source investigation
FS = Feasibility study
GCA = Golf Course Area
GPR = ground-penetrating radar
GW = Groundwater
IRP = Installation Restoration Program
IWTP = Industrial waste treatment plant
JP = jet propulsion fuel
MCL = Maximum Contaminant Level
mg/kg = milligrams per kilogram
NFRAP = No Further Response Action Planned
OU = Operable Unit
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PCE = Tetrachloroethene
pH = hydrogen ion concentration
PPL = priority pollutant list
PRG = preliminary remediation goal
RA = remedial action
RCRA = Resource Conservation and Recovery Act
RI = remedial investigation
ROD = Record of Decision
RWQCB = Regional Water Quality Control Board
SBIAA = San Bernardino International Airport Authority
SVE = Soil vapor extraction
SVOC = Semivolatile organic compound
SWAP = Satellite Waste Accumulation Point
TCA = Trichloroethane
TCE = Trichloroethene
UST = Underground storage tank
VOC = volatile organic compound

even though it is not included in the CBA OU. Sites requiring institutional controls are described below. All others are discussed in Table 3-4.

Site 2. The former Base Landfill No.2 has been identified as IRP Site 2. This former base landfill was consolidated into a smaller footprint and construction of a new landfill cover, gas collection system, and surface water management system were completed in 1998. The Air Force concluded that ICs, coupled with long-term O&M, provide assurance that the residual risk is managed properly. This means that residential (or unrestricted) use of this property will not be allowed (Earth Tech 2005a).

Site 5. The former Fire Protection Training Area No.1 has been investigated as IRP Site 5. The selected remedy included SVE implementation, excavation and removal of contaminated soil (for disposal both on- and off-base), burial on-site of materials from the Small Arms Range, and backfilling of clean cover soil. In addition, the Air Force concluded that because of residual lead contamination, the selected remedy should include ICs. Therefore, residential (or unrestricted) use of this property will not be allowed (Earth Tech 2005a).

Site 19. IRP Site 19 was known as Waste Drum Storage Area No. 1, where drums of fuels, oils, electroplating solutions, TCE and trichloroethane (TCA) sludge, and cyanide waste solutions were stored on an unpaved fenced lot. An aircraft washing facility was removed in 1966, and the area was resurfaced with 20 inches of concrete to become part of the flight line. PCBs were detected in excess of residential PRGs, primarily in the upper 6 inches of soil beneath the concrete runway apron. The interim ROD identified a use restriction documenting the presence of the contamination as the preferred alternative. There is currently no exposure pathway to residual PCB contamination because of the runway apron concrete cover, and no groundwater contamination is associated with this site. The risk assessment calculated theoretical risks based upon removal of the runway apron. The land is protected by an FAA covenant that allows only industrial, commercial, and airport support activities. The Air Force concluded that in spite of PCBs 6 inches below the runway concrete, the selected remedy of IC (incorporated in the deed as grantee covenants) would effectively limit the potential for residential (i.e., unrestricted) use of this site.

AOC 4. This AOC consists of the solids collection pit and trench drains associated Building 301. The selected remedy for AOC 4 is IC. The Air Force concluded that because of residual contamination, the selected remedy should be ICs. These will be incorporated in the deed as grantee covenants. As a result, residential (or unrestricted) use of this property will not be allowed (CDM 2003, Earth Tech, 2005a).

Small Arms Range. The area of the former Small Arms Range (SAR) was identified for evaluation, but not as an IRP Site or AOC. The selected remedy for the SAR included excavation and removal of some materials off-base for disposal, relocation and disposal of other materials on the base (at the former base landfill no.2 - IRP Site 2), burial of other materials on-base (at Site 5), and ICs. The institutional controls

have been adopted as the preferred alternative. Deed restrictions will be used to limit the future use of the site to commercial or industrial activities (Earth Tech 1997b, Earth Tech 2005a).

3.11 Indoor Air Quality

Within the CBA at former Norton AFB, potential reuse of remediation sites includes industrial and office building development, as well as continued use as an airport facility and, on some properties, residential development. Comparable situations have been evaluated in the Basewide OU for their potential to impact indoor air quality. Test samples were used to model the potential inhalation risk at sites having reusable existing structures or for undeveloped sites with a potential for future development. Modeling protocol assumed this to be commercial development, specifically office buildings, with each structure providing a minimum of 22,500 square feet of usable space. Risk calculations used set input parameters and development assumptions; non-carcinogenic health impacts were forecast over a period of 25 years and carcinogenic health impacts over a period of 70 years.

Indoor air modeling evaluated a total of 10 remediation sites (AOCs 12, 13, 18, 23, 31, 33, 34, 35, 45, and 60) with a potential for development. The modeling considered their cancer risk as well as their risk for non-cancerous health impacts. These assessments are discussed on a site-by-site basis in the BW FS report (CDM 2003). Modeled non-cancerous health impacts to indoor air quality were compared to a health index (HI) threshold standard of 1.0 as a significant health risk; site air models lower than this number were considered to have no non-cancerous health risk. A threshold index for cancerous health risks of 1.0 x 10-6 was also set, so that higher numbers from the site air model results would be considered as a significant risk. In cases where this threshold was exceeded, the study also considered factors such as the short half-life of the related emissions as well as standard structure sizes used for commercial purposes, identified standard air transfer rates for commercial structures and considered the degree that these measures would reduce impacts in terms of actual site development. These factors were included in evaluation of the site air models' potential for emission impacts on indoor air quality. This evaluation concluded that the potential risk from poor indoor air quality on human health was in the acceptable (i.e., not a concern) in all cases.

Because 8 of the 10 AOCs included in this evaluation are located in the portion of the base that is within both the BW OU and the CBA OU, the results are equally applicable to both OUs. Therefore, human health risks from indoor air quality problems are not considered to be significant in either the BW OU or the CBA OU.

THIS PAGE INTENTIONALLY LEFT BLANK

4.0 Remedial Action

This section describes past remedial actions for the two sites under consideration, including the review process, issues, evaluations, and recommendations for any additional activities that may be warranted. The Five-Year Review process includes review by an administrative team, community involvement, document review, data review, site inspection, and interviews with local government officials.

- **Administrative Review.** Members of the BRAC Cleanup Team began discussing the Five-Year Review in October 2004. Mr. Philip H. Mook, Jr. Base Environmental Coordinator for the AFRPA, directed the 5-year review for CBA OU, including Site 19. Derrick Coleman, Ph.D., Earth Tech performed the review with support provided by Bill Muir, Senior Geologist, Earth Tech, Linda Spitzer, Community Involvement Specialist, Earth Tech, and Melody Gillette, Planning and Environmental Specialist, Earth Tech.
- **Community Involvement.** To inform the community about this second Five-Year Review, the Air Force will publish a notice in the San Bernardino Sun, a newspaper with wide distribution in the area of, and surrounding, the former base to announce the availability of the draft 5-year review report for public comment. The BRAC Cleanup Team decided that a public meeting for the review would not be necessary unless interest was shown in response to the newspaper advertisement. The air Force has held annual public forums for Norton since 1999 (when the Restoration Advisory Board was adjourned) through 2004. The forums provided detailed information on the progress of cleanup of the TCE plume and other sites, and also gave opportunity for formal and informal interaction with representatives of the Air Force and U.S. EPA, California Department of Toxic Substances Control, and California Regional Water Quality Control Board.
- **Document Review.** The Five-Year Review considers all relevant documents, including previous reports, records of decision, O&M records and monitoring data (see References, Section 5).
- **Data Review.** Groundwater monitoring data and reports on removal actions using excavation, SVE and pump and treat (PAT) technology, which have been successfully completed.
- **Site Inspection.** Each of the sites was inspected in June 2005 to evaluate success of the remedy. Summaries of the results of these inspections are provided in Appendix A. In addition, all monitoring and extraction/injection wells are regularly checked to ensure security when sampling is conducted.
- **Interviews.** Interviews with U.S. Air Force, local agency, and private companies were completed in May 2005, and are summarized in Appendix B. The BRAC Cleanup Team has reviewed the progress on a regular basis, as have representatives of the IVDA and the cities of Riverside and San Bernardino.

4.1 CBA OU - Component 1, Groundwater

The purpose of this component was to prevent exposure to groundwater containing VOCs exceeding maximum contaminant levels (MCLs) for drinking water and to protect groundwater resources. Exposure to groundwater would be prevented through deed restrictions, and groundwater resources would be protected by removal of VOCs from the groundwater to levels protective of human health and the environment. The ROD also provided for off-base water supply wells where contaminant levels exceeded the MCL of 5 μg/L in the Water Supply Contingency Policy (WSCP).

4.1.1 Remedy Selection

The remedy for groundwater contamination in the CBA was outlined in the ROD for this OU (U.S. Air Force 1993a). It was addressed as Component 1, and included four primary elements.

1. **Groundwater Treatment.** This remedial action included extraction of groundwater, treatment by air stripping, and return (i.e., injection) of treated water into the ground. Direct release of emissions from the air stripping operations were allowed as long as they were in compliance with all applicable air quality regulations. If air quality requirements could not be met, then additional treatment by vapor-phase carbon adsorption was required.
2. **Groundwater Monitoring.** The ROD specified quarterly sampling from specified wells and analysis for VOCs. This was to provide an evaluation of the areas where contaminants in the groundwater were above action levels.
3. **Off-Base Water Supply.** To remedy water supply problems for off-base wells, the Air Force agreed to provide short-term well-head treatment (using mobile granular activated carbon, or GAC, units), long-term well-head treatment (using “permanent” air stripping systems), or provide alternate water supplies (by drilling new wells).
4. **Institutional Controls.** Deed restrictions were to be placed on any Norton AFB property (that is on top of contaminated groundwater) prior to its sale or transfer. These restrictions were intended to prevent the installation of water wells that would withdraw groundwater containing VOCs above cleanup standards.

The remedy was expected to take 30 years to complete, and all cost estimates were based on that assumption.

4.1.2 Remedy Implementation

At the time the ROD was completed the CBA pump and treat (PAT) system had been in operation in a limited capacity (200 gpm) for a year. It continued to operate in this capacity for another year and a half before being upgraded to a final capacity of 400 gpm in November 1994. The upgraded facility went into service in January 1995. Two months after the upgraded CBA PAT went into service, a second treatment plant, with an installed capacity of 2,250 gpm, went into service to capture and treat groundwater at the Base boundary (BB). This BB PAT operated for a combined duration of 5 years and 9 months, and removed an estimated total of 292.9 lbs of TCE by treating approximately 5.65 billion gallons of groundwater. During the period since the last five-year review (since July 1999), the BB PAT operated for a total duration of 16 months, processed about 1.08 billion gallons of water, and removed about 15.4 lbs of TCE. During the same (most recent) 5-year review period, the CBA PAT operated for a total duration of 2 years and 3 months, processed approximately 378 million gallons of groundwater, and removed about 18 pounds of TCE. Prior to the first 5-year review period, the CBA PAT treated about 869 million gallons of groundwater, and removed an estimated 378 lbs of TCE.

Quarterly sampling results and annual reports of groundwater monitoring and ground water level measurements have been provided to the regulatory agencies since 1996. The Air Force will continue to monitor the groundwater to evaluate the effectiveness of compliance with all applicable regulations identified in the CBA OU ROD.

To meet WSCP requirements, the Air Force designed and installed a wellhead treatment system at the Raub 5 well (see Figure 3-1) for the City of Riverside. In addition, the Air Force currently monitors groundwater constituents at the Raub 5 water supply well twice a month, and checks for treatment system status (through after treatment water sampling) on a monthly basis. If the status check indicates a need, or the City of Riverside advises the Air Force of a need, the carbon unit of the treatment system is changed out by the Air Force. Monitoring requirements of the WSCP vary with the level of contaminants found in the groundwater, and will change over time as TCE concentrations change. If those concentrations go down, the requirement for treatment would also go down, or could be eliminated.

Institutional controls in the form of deed restrictions have been incorporated into the base property transfer process. The total area of the former base is comprised of 42 parcels (see Table 4-1) that have been or will be transferred (excluding parcels without separate areas like roadways and utility rights of way). Most of these individual parcels either have been deeded or leased, and the remaining parcels have been otherwise transferred. Included among the transferred properties are 20 parcels that have deed restrictions which prohibit the drilling of water supply wells anywhere on the parcel. In addition, no property overlying the VOC plume (referred to herein as the TCE Plume) can be sold or transferred until the IAG members concur that the deed restriction is in place. It is important to note that in 1996 this remedy was given the status of "operating properly and successfully," thus allowing transfer of property overlying the plume.

4.1.3 Systems Operations and Maintenance

The Air Force has provided operation and maintenance (O & M) coverage for both of the groundwater treatment systems at the former Norton AFB from 1992 through the present. This included the CBA PAT and the BB PAT.

The **CBA PAT** system began operating in 1992 and was upgraded in 1995 and consisted of five extraction wells; four injection wells; an air stripper; blower; heater; vapor- and liquid-phase canisters; and associated pumps, valves, piping, storage tanks, monitoring instrumentation, and control systems. In accordance with the CBA Remedial Action Work Plan, the system was upgraded in winter 1994 and was operating at 400 gpm from January 1995 until March 1999 when it was turned off for 1 year, restarted in April 2000, and turned off again in May 2002 because of low levels of TCE.

Table 4-1. Former Norton AFB Reuse Status

Parcel No.	Acres[1]	Property Status	Groundwater IC[2]
A (CMP area)	1005	Deeded	yes
A-1 (IWL)	36	Leased	yes
B-1	157	Deeded	yes
B-1C	27	Leased	yes
B-1C east	14	Deeded	yes
B-1C west	3	Deeded	yes
B-2	56	Deeded	yes
B-3	52	Deeded	yes
B-4	11	Deeded	yes
C	120	Leased	
C-1	16	Deeded	
C-2	18	Deeded	yes
C-3	9	Deeded	yes
C-4	13	Deeded	yes
D	20	Transferred	
D-1	4	Transferred	
DFAS	36	Deeded	
E-1	33	Transferred	yes
E-2A	4	Leased	yes
E-2B	12	Leased	
E-3 west	2	Deeded	
E-3 east	4		
E-4	2	Deeded	yes
F	29	Deeded	yes
G-1	7	Deeded	
G-2	15	Deeded	
I-1	65	Deeded	yes
I-2	84	Deeded	yes
I-3	106	Deeded	yes
I-3A	45	Deeded	
J	1	Deeded	
J-1	2	Deeded	yes
K-1	8	Deeded	
K-2	7	Deeded	
K-3	3	Deeded	
K-4	15	Deeded	
L	7	Deeded	
M	14	Deeded	
N	4	Deeded	
NCO Housing	50	Deeded	
Officer's Housing	27	Deeded	

Notes: 1 Land areas are approximate, not exact parcel areas.
2 Yes indicates deed restrictions were noted in the FOST as required.

The **BB PAT** system began operating in 1995 and consisted of three extraction wells, seven injection wells, an air stripper, blower, heater, carbon adsorption unit, and associated pumps, valves, piping, tanks,

monitoring instrumentation and control systems. The BB PAT was turned off in April 2000 for 1 year, restarted in April 2001, and turned off the second time in November 2001 because of low levels of TCE.

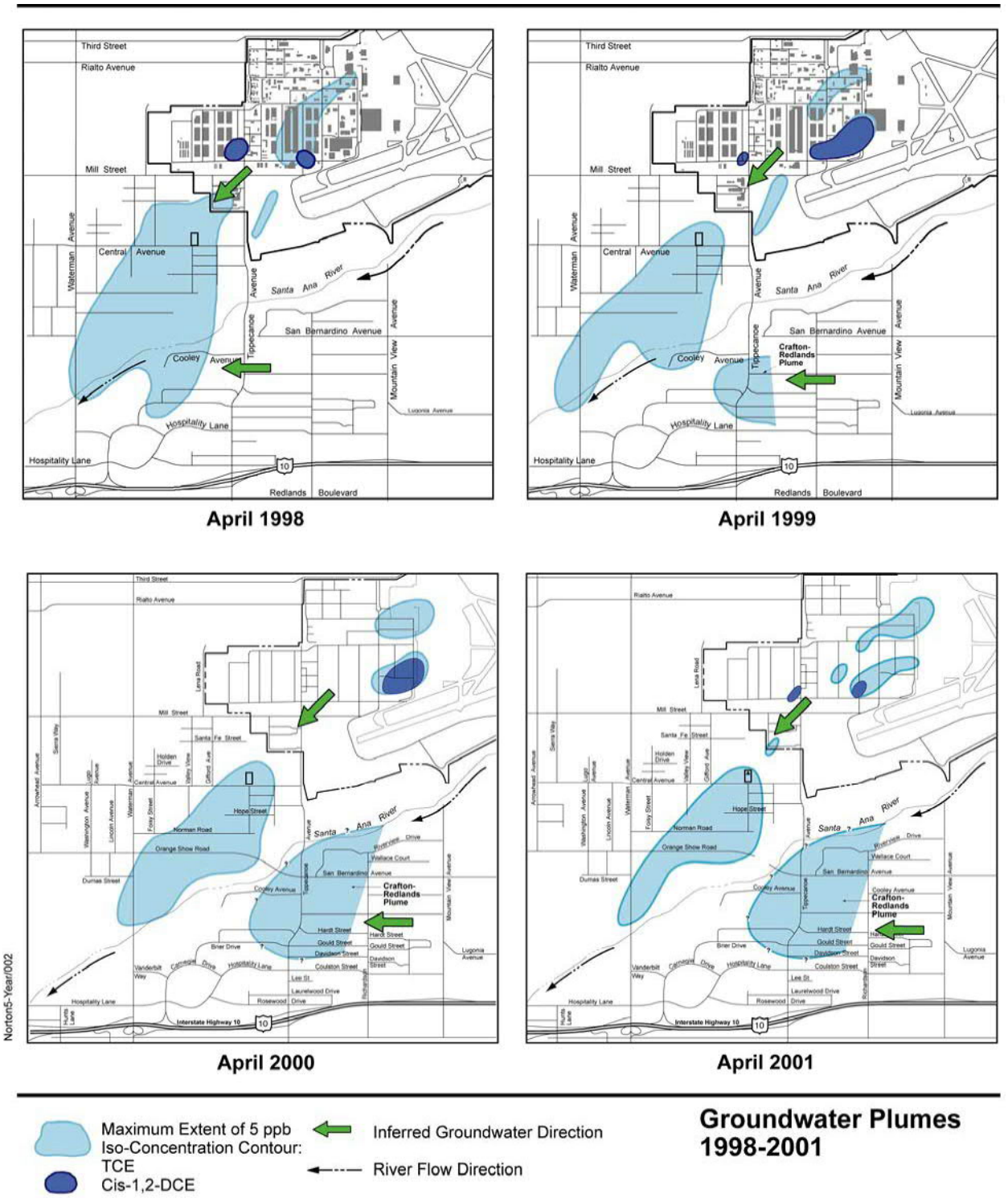
4.1.4 Progress Since the Last Five-Year Review

In the first Five-Year Review for the CBA OU the protectiveness statement was provided by Thomas J. Bartol, Base Environmental Coordinator (AFBCA, Norton Operating Location). His statement read as follows:

> *"I certify that the soil remedies have been constructed to eliminate the direct soil contact risk for the sites addressed as part of the CBA OU. The groundwater P&T remedies have been constructed and are working as designed and have substantially reduced the threat to human health and the environment originally posed by the contaminants prior to implementation of the remedies. The CBA P&T remedy has met its objective of removing TCE from the location of the plume with the highest concentrations to levels that address the ROD standards. The SVE remedies have been constructed and completed to substantially reduce the soils concentrations of TCE and cis-1,2-DCE and resulting contaminant concentrations in the aquifer, particularly at the Building 673 source from location where the plume originated. The SVE remedy has not been totally effective in reducing TCE concentrations in the aquifer to below ROD standards and continued monitoring of groundwater at the source locations is warranted. The ROD standards have not been met for the aquifer requiring continuation of portions of the CBA OU remedies, particularly the WSCP. The WSCP, which addresses domestic water supplies and the ongoing groundwater-sampling program, will be continued in order to ensure that the protectiveness of the remedies remains."*

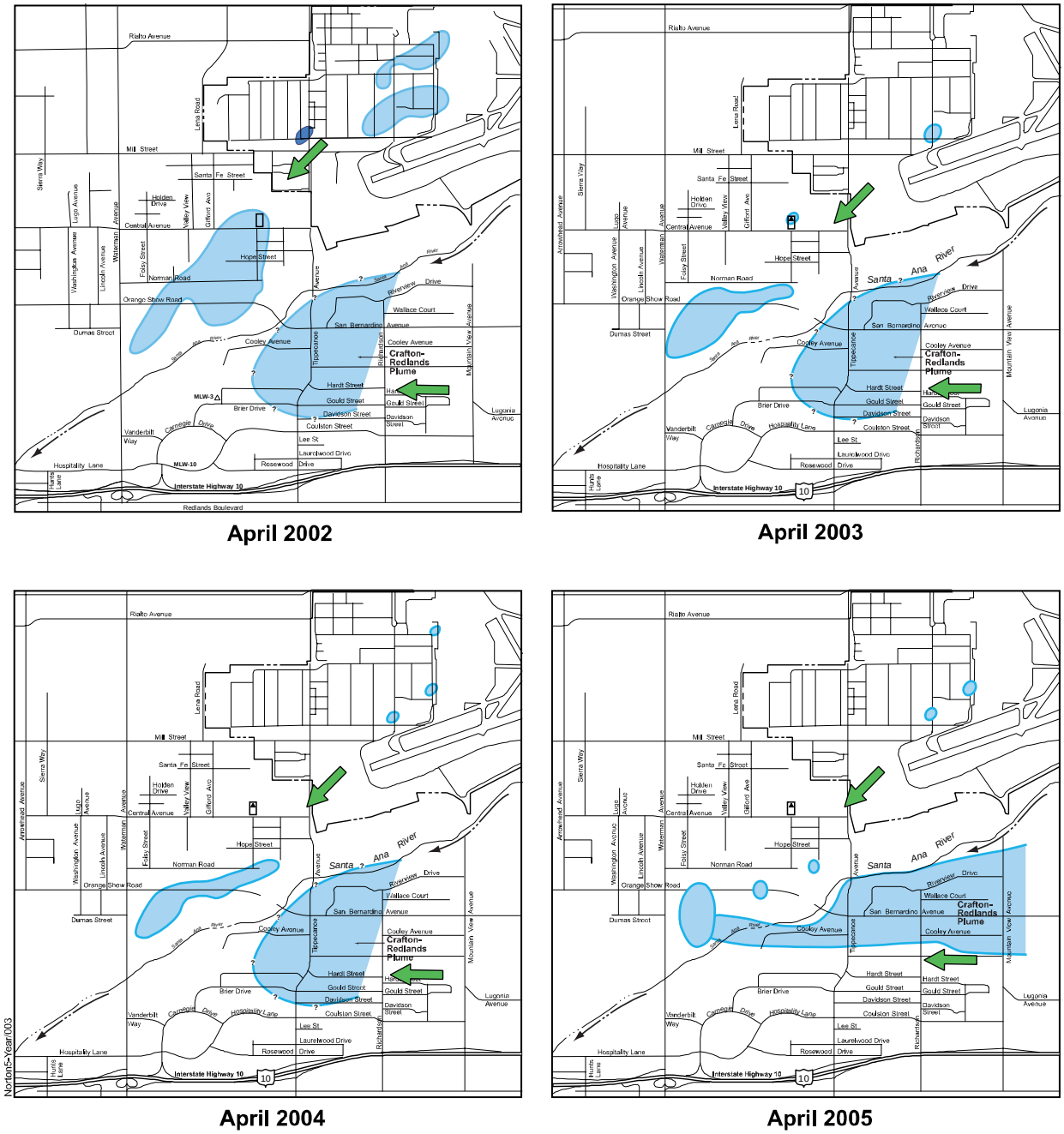
The CBA and BB PAT systems have treated approximately 6.7 billion gallons of water and removed nearly 690 pounds of TCE from the local groundwater (Earth Tech, 2005). Although both PAT systems are shut down, the Air Force will continue to routinely sample the groundwater monitoring wells and specific off-base production wells in the area (Earth Tech, 2005). Figure 4-1a and Figure 4-1b show the changes in the extent of groundwater containing TCE in concentrations greater than or equal to the MCL value of 5 μg/L from April 1998 to April 2004. Specific progress since the last Five-Year Review is shown in the significant decrease in the extent of contaminated groundwater in the years from 2000 through 2004.

The most recent published data from the monitoring program (for April 2005) shows the average TCE concentration for all on-base monitoring wells was 5.2 micrograms per liter (μg/L), and the average for off-base monitoring wells was 1.9 μg/L. Only two on-base wells produced groundwater with samples containing TCE concentrations that were over the MCL (M/EW-11 at 6.0 μg/L and MW-215 at 13.0 μg/L). In addition, there were two off-base wells that had samples with concentrations above the MCL (MW-314 at 6.0 μg/L, and MW-327 at 5.2 μg/L). DCE was below the MCL in all monitoring wells. Because these low levels of TCE/DCE are indicative of the current state of the groundwater concentrations, a number wells were approved by the BCT for decommissioning (i.e., destruction). The rationale for decommissioning a monitoring well was tied to its usefulness in defining the area of contamination. A total of 53 monitoring wells were destroyed in-place during April and May 2005, including the wells approved for decommissioning and others that were in the way of developing parcels.



Groundwater Plumes 1998-2001

Figure 4-1a



Maximum Extent of 5 ppb Iso-Concentration Contour:
TCE
Cis-1,2-DCE

Inferred Groundwater Direction

River Flow Direction

Groundwater Plumes 2002-2005

Figure 4-1b

The last Five-Year Review Report noted that the frequency of monitoring cross-gradient and down-gradient wells had been increased to quarterly and the Air Force was committed to continued evaluation of the trend of change in the TCE concentrations. Sampling frequencies have changed over the subsequent five-year review period according to changes in plume geometry. Historically, groundwater elevations in the CBA fluctuate seasonally, with the elevations decreasing during the late summer and fall and increasing during the late winter and spring. However, between April 1999 and April 2004, there was a basewide trend of groundwater elevations generally declining. In April 2004 groundwater elevations were at a 7-year low (seasonally adjusted), and numerous A-level wells were dry (all on-base and several off-base wells). The general decline in groundwater elevation was attributed to an extended period of drought.

4.2 BW OU - IRP Site 19

Site 19 was identified as an IRP site during the initial Phase I records search in October 1982. The site was previously used for drum storage and aircraft washing. Drums containing fuels, oils, electroplating solutions, TCE, TCE sludge, and cyanide wash solutions were stored on the ground without a liner or containment. The remedial investigation report included data on PCB concentrations in the soil at Site 19, that showed 23 of the 67 soil samples collected contained PCBs. Only 2 of the 23 samples containing PCBs had concentrations that exceeded the 10 mg/kg residential PRG for PCB (CDM 1993c). The PCBs on site are encountered primarily in the top 6-inches of soil, which is presently covered by 20 inches to 24 inches of concrete that serves as runway apron. In this state the PCBs are considered to be immobile and capped, and have no viable exposure pathway as long as they remain in this condition.

4.2.1 Remedy Selection

The interim ROD describes the remedy selection and implementation for IRP Site 19 (U.S. Air Force, 1997b). The selected remedy for Site 19 is ICs (in the form of land-use restrictions) and maintenance of concrete as the existing site cover.

4.2.2 Remedy Implementation

The land that includes Site 19 is part of Parcel A (IWL). This portion of Parcel A was “carved out” of the Parcel A deed transfer, and is leased to the airport authority. Lease restrictions are in place that prohibit all land uses except for airport, requires AF approval of any and all construction and excavation activities, and retains property access rights for the Air Force and regulatory agencies. Once the BW OU ROD is signed the property transfer by deed will follow. The deed restrictions, and a State Land Use Covenant as specified in the ROD will supersede the lease restrictions at the moment of property transfer.

4.2.3 Systems Operations and Maintenance

The remedy primarily selected for PCB contamination at Site 19 is the use of ICs to insure that the current concrete cover at the site (in the form of runway apron) is kept in place for the long term. In this case the ICs that are in place are enforced by a Federal Aviation Administration (FAA) covenant that will only allow

industrial, commercial, or airport support uses of the land. In its current capacity, the concrete apron serves as a parking and access way for aircraft going to and from the adjacent maintenance hangar. To remain a viable travel route or parking area for aircraft, the concrete will require periodic maintenance from the airport authority (SBIAA). In addition, it will remain accessible for periodic inspections to verify that the concrete remains intact and in place, and continues to provide capping protection from the underlying soil.

4.2.4 Progress Since the Last Five-Year Review

The selected remedy for Site 19 did not require any further active remedial actions at the site. Approval of the preferred remedy acknowledged that it was protective of human health in its current condition. Therefore, the only progress to be noted at this site since the Interim ROD (U.S. Air Force, 1997b) was prepared, is the continued maintenance of the concrete that covers the site. This indicates that the ICs have been an effective remedy to control exposure to PCBs at the site.

THIS PAGE INTENTIONALLY LEFT BLANK

5.0 PROTECTIVENESS STATEMENT

The remedy outlined in the Central Base Area (CBA) Operable Unit (OU) Record of Decision (ROD) is protective of human health and the environment. The protectiveness of the remedy for the groundwater component, as assessed in this Five-Year Review is provided in Section 5.1.1. The technical assessment of the remedy is summarized in Section 5.1.2.

5.1 CBA OU

The remedy at the CBA OU is expected to be protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risks are being controlled.

5.1.1 Component 1 - Groundwater

The purpose of this component was to prevent exposure to groundwater containing VOCs exceeding maximum contaminant levels (MCLs) for drinking water and to protect groundwater resources. Exposure to groundwater was to be prevented through deed restrictions, and groundwater resources were to be protected by removal of VOCs from the groundwater to levels protective of human health and the environment. The ROD also provided for off-base water supply wells where contaminant levels exceeded the MCLs through the required preparation of a Water Supply Contingency Policy (WSCP).

The remedial actions implemented and modified during the operations and maintenance (O&M) period are protective of human health and the environment. All work was done in conformance with the requirements set forth in the ROD (U.S. Air Force, 1993) and CBA OU Summary of Remedial Actions (U.S. Air Force, 1996). Two pump and treat (PAT) systems were installed to remove TCE from the groundwater. The CBA PAT was installed as a pilot system in 1992 near the source area, was upgraded in 1994, and began operating at full capacity from 1995 to 2002, except when it was turned off in March 1999 for 1 year. The Base Boundary (BB) PAT system was installed in 1995 to capture the plume at the base boundary. The BB PAT system operated until 2001, except for 1 year when it was turned off. The two systems treated 6.9 billion gallons of groundwater and removed 450 pounds of TCE. The systems were turned off when the average level of TCE in the plume dropped below 5 micrograms per liter (μg/L), the maximum contaminant level (MCL) for drinking water and the ROD cleanup standard. Groundwater monitoring and the WSCP remain in place.

5.1.2 Technical Assessment

The following answers form the technical assessment and conclude that the remedial actions performed are protective of human health and the environment for the groundwater component. (Note: The remedy for the CBA OU ROD was given “operating properly and successfully” status in 1996, allowing transfer of property overlying the plume).

Question A: Is the remedy functioning as intended by the decision documents?

Implementation of ICs and other measures. Deed restrictions that "run with the land" were implemented on properties overlying the plume that have been leased or transferred by the Air Force to the community. These deed restrictions prevent drilling of drinking water wells on former base property that overlies contaminated groundwater.

Remedial Action Performance. Remedial action for groundwater (Component 1) continues as monitoring only.

System Operations and Maintenance. The groundwater PAT systems are no longer operating, but they are maintained on a periodic basis to keep them operable if required. The Air Force has requested that regulators approve the closure and dismantling of both the CBA and BB PAT systems (Earth Tech 2005b).

Opportunities for Optimizations. Since the last five-year review, no opportunities for optimizations were presented for the groundwater component.

Early Indicators of Potential Remedy Failure. All indications for the groundwater component are that the remedy has been extremely successful. Both the CBA and BB PATs were turned off in 2002. No indications of failure have been identified and groundwater monitoring continues to verify the long-term success of this remedy.

Question B: Are the assumptions used at the time of the remedy selection still valid?

Changes in Standards. There have been no changes in MCL or PRG values for the constituents of concern during the last five-year review period. Therefore the results of protectiveness evaluations are still valid

Changes in Risk Assessment Methodologies. Risk evaluation methods have not changed during the current review period, and this has not altered assumptions for the remedy selection for the groundwater component of the CBA OU.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

No additional information has come to light that could call into question the protectiveness of the remedy in the groundwater component specifically, or the CBA OU ROD in general.

5.1.3 Issues Concerning the Remedy

The groundwater component which is contaminated with TCE/DCE has been remediated to meet the MCL. Only four wells are currently above the MCL (Earth Tech 2005d). In addition, the sources of groundwater contamination in the TCE plume have been remediated using SVE, and these components (CBA OU Components 2 through 4) were closed prior to the previous five-year review.

5.1.4 Recommendations and Follow-up Actions

Continue groundwater monitoring to ensure protection of human health and the environment.

5.2 BW OU

The remedy outlined in the Interim ROD for Site 19 is protective of human health and the environment (U.S. Air Force 1997b). The protectiveness of the remedy for PCBs in the soil at Site 19 and the technical assessment of the remedy are summarized below.

5.2.1 IRP Site 19

The selected remedy for Site 19 involved IC through land use restrictions. The contaminant of concern is PCB which is found in the top 6 inches of soil that underlay the former drum storage area. The soil surface is currently beneath 20 inches to 24 inches of concrete installed as part of the flightline taxiway in 1966. This concrete cover acts as a protective cap and a barrier to direct contact with the soil containing the PCBs. As long as the concrete remains intact, the protection for human health and the environment is considered effective. Land use restrictions are believed to be the best way to control the maintenance of the concrete cap and the protection.

5.2.2 Technical Assessment

The following answers form the technical assessment and conclude that the remedial actions performed are protective of human health and the environment for IRP Site 19.

Question A: Is the remedy functioning as intended by the decision documents?

Implementation of ICs and other measures. Land use restrictions that are implemented through, and enforced by, the County of San Bernardino limit the current and future use of the land at this site. Unrestricted use is not allowed and therefore the land cannot be used for commercial, industrial, or airport support activities. In addition "grantee covenants" prohibit conversion of any Site 19 area to residential, hospital, school, or day-care land uses.

Remedial Action Performance. Remedial action for PCBs in the soil at this site continues as land use restriction.

System Operations and Maintenance. No systems are currently operating at this site.

Opportunities for Optimizations. Since the last five-year review, no opportunities for optimization have been presented for the remedy at Site 19.

Early Indicators of Potential Remedy Failure. There are no indications of failure of the remedy at this site.

Question B: Are the assumptions used at the time of the remedy selection still valid?

Changes in Standards. The toxicity values and carcinogenicity assessment for PCBs were revised in 1997 as part of US EPA's IRIS reassessment program. The reassessment resulted in changes to the health-based screening levels for assessing potential health impacts of PCBs in soils. The new Preliminary Remediation Goals (PRG) for PCBs is 0.22 mg/kg. These changes for the chemicals at the site do not affect the protectiveness of the remedy.

Changes in Risk Assessment Methodologies. Risk evaluation methods have not changed during the current review period, and this has not altered assumptions for the remedy selected for Site 19 the BB OU.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

No additional information has come to light that could call into question the protectiveness of the remedy for Site 19 specifically or the BB OU ROD in general.

5.2.3 Issues Concerning the Remedy

No issues have been raised in the current five-year review period concerning the selected remedy for Site 19.

5.2.4 Recommendations and Follow-up Actions

Continue to implement the ICs in place for this property.

6.0 NEXT FIVE-YEAR REVIEW

Should the cleanup activities at the CBA OU remain incomplete within the next 5 years, the next review of the TCE Groundwater Plume would be due 5 years after the signature date on this report. The next review of the Site 19 remedy will be in the first five-year review report for the BW OU, five years from the issue date of the BW ROD (Earth Tech 2005a).

THIS PAGE INTENTIONALLY LEFT BLANK

7.0 REFERENCES

Numbers in brackets provide document identification used in the Norton AFB IRP Administrative Record.

Bechtel Environmental, 1996. *Closure Report, Former Underground Storage Tank Site at Building 647, IRP Site 6, Norton Air Force Base,* California. [1804]

_____ 1997a. *Project Summary Report Underground Storage Tank Removal Program, Norton Air Force Base.* [2323]

_____ 1997b. *Final Closure Report, IRP Site 8, Areas of Concern 3, 23, 37, 38, and the Heating Oil Line*. [2252]

California Department of Toxic Substances Control, 2002. Letter from Jose Kou, *Partial Closure Certification Acceptance for Hazardous Waste Management Units at the Air Combat Camera Services Unit, Former Norton Air Force Base, EPA ID No. CA4570024345.*

California Department of Water Resources, 1991. California Well Standards, Bulletin 74-90.

CDM Federal Programs Corporation, 1991. Final Field Sampling Plan for the Comprehensive Remedial Investigation and Feasibility Study, 2 volumes, prepared for Martin Marietta Energy Systems (HAZWRAP). March.

_____ 1993a. Norton AFB Final Remedial Investigation Report, Installation Restoration Program Sites Operable Unit (15 Sites), prepared for Martin Marietta Energy Systems (HAZWRAP). March.

_____ 1993b. Groundwater Data Trends Report for Norton Air Force Base, prepared for Martin Marietta Energy Systems (HAZWRAP). September.

_____ 1993c. Final Norton Air Force Base Remedial Investigation Report, Installation Restoration Program Sites Operable Unit (15 Sites). [1121]

_____ 1994a. Groundwater Monitoring Plan for Norton Air Force Base, San Bernardino, California, prepared for Martin Marietta Energy Systems (HAZWRAP). February.

_____ 1994b. Draft Technical Memorandum, Groundwater Sampling Procedures, Comprehensive Groundwater Monitoring Program for Norton Air Force Base, San Bernardino, CA, prepared for Martin Marietta Energy Systems (HAZWRAP). August.

_____ 1995a. Second Annual Groundwater Data Trends Report for Norton Air Force Base, San Bernardino, CA, prepared for Martin Marietta Energy Systems (HAZWRAP). March.

_____ 1995b. *Final Soil Vapor Extraction Treatability Study Test Report, Central Base Area Operable Unit*, March 27.

_____ 1995c. Norton AFB Proposed Well Abandonment and Repair Plan, San Bernardino, CA, prepared for Martin Marietta Energy Systems (HAZWRAP). April.

_____ 1995d. Final Technical Memorandum, Basewide Confirmation Study Results/Expanded Source Investigation Work Plan for Norton Air Force Base, San Bernardino, California. [1251]

_____ 1996a. Final Technical Memorandum, Results of the Confirmation Study Addendum No. 1/Expanded Source Investigation Addendum No. 1 Work Plan for Norton Air Force Base, San Bernardino, California. [1635]

_____ 1996b. Final Technical Memorandum Results of the Confirmation Study Addendum Number 2. [1919]

_____ 1996c. Final Technical Memorandum, Expanded Source Investigation Results, Norton Air Force Base, San Bernardino, California. [1814]

_____ 1996d. Final Technical Memorandum, Expanded Source Investigation Addendum Number 1, Norton Air Force Base, San Bernardino, California. [1974]

_____ 1996e. Third Annual Groundwater Data Trends Report and Long-Term Groundwater Monitoring Plan for Norton Air Force Base, San Bernardino, CA, prepared for Lockheed Martin Energy Systems (HAZWRAP). February.

_____ 1996f. Addendum No. 1 to Final Technical Memorandum, Norton AFB Proposed Well Abandonment and Repair Plan, Norton Air Force Base, San Bernardino, CA, prepared for Lockheed Martin Energy Systems (HAZWRAP). February.

_____ 1996g. Addendum No. 2 to the Final Technical Memorandum, Norton AFB Proposed Well Abandonment and Repair Plan, Norton Air Force Base, San Bernardino, CA, prepared for Lockheed Martin Energy Systems (HAZWRAP). November.

_____ 1996h. Final Engineering Evaluation/Cost Analysis, Parcel I-3, Norton Air Force Base, San Bernardino, California. [2803]

_____ 1996i. Summary Report for Installation of MW298 and Sampling of Wells Monitoring the Air Combat Camera Services Unit. [1948]

_____ 1996j. Decision Document to Support NFRAP at Sites 3 and 4. [1879]

_____ 1996k. Work Plan and Field Sampling and Analysis Plan for Installation of MW298 and Groundwater Sampling of Wells Monitoring ACCS. [1667]

_____ 1997a. Fourth Annual Groundwater Data Trends Report and Long-Term Groundwater Monitoring Plan for Norton Air Force Base, prepared for Lockheed Martin Energy Systems (HAZWRAP). February.

_____ 1997b. Engineering Evaluation/Cost Analysis, IRP Site 17 Perched Zone Groundwater for Norton Air Force Base, San Bernardino, California, prepared for Lockheed Martin Energy Systems (HAZWRAP). July.

_____ 1997c. Technical Memorandum, Groundwater Sampling Data Results and Four Quarters Data Trends Report for the Monitoring Wells ACCS Unit. [2352]

_____ 1998a. Fifth Annual Groundwater Data Trends Report and Long-Term Groundwater Monitoring Plan for Norton Air Force Base, prepared for Lockheed Martin Energy Systems (HAZWRAP). February.

_____ 1998b. Addendum No. 3 to the Well Abandonment and Repair Plan for Wells Identified under the Fifth Annual Data Trends Report and Long-Term Groundwater Monitoring Plan for Norton Air Force Base, San Bernardino, CA, prepared for Lockheed Martin Energy Systems (HAZWRAP). August.

_____ 1999a. Sixth Annual Groundwater Data Trends Report and Long-Term Groundwater Monitoring Plan for Norton Air Force Base, San Bernardino, California, prepared for Lockheed Martin Energy Systems (HAZWRAP). March.

_____ 1999b. Seventh Annual Groundwater Data Trends Report and Long-Term Groundwater Monitoring Plan for Norton Air Force Base, San Bernardino, California, prepared for Lockheed Martin Energy Systems (HAZWRAP). October.

_____ 1999c. Technical Memorandum, July 1999 Groundwater Sampling Data Results Summary Report, Comprehensive Groundwater Monitoring Program, Norton Air Force Base, San Bernardino, CA, prepared for Lockheed Martin Energy Systems (HAZWRAP). November.

_____ 1999d. *Final Former Norton Air Force Base Central Base Area Operable Unit Five-Year CERCLA Review.* [AR3027]

_____ 2000a. Addendum No. 4 to the Well Abandonment and Repair Plan for Wells Identified under the Sixth Annual Data Trends Report and Long-Term Groundwater Monitoring Plan for Norton Air Force Base, San Bernardino, CA, prepared for Lockheed Martin Energy Systems (HAZWRAP). February.

_____ 2000b. Draft Eighth Annual Groundwater Data Trends Report and Long-Term Groundwater Monitoring Plan for Norton Air Force Base, San Bernardino, California. June

_____ 2000c. Technical Memorandum, Additional Soil Characterization, IRP Site 10, August. [3199]

_____ 2000d. IRP Sites 10 and 12, Additional Soil Characterization in Support of the Basewide Feasibility Study, November. [3207]

_____ 2003. Basewide Feasibility Study, March.

CDM and Allied Technology Group, 1996. Final Work Plan for Explosive Ordnance Training Area Clearance, Area of Concern 73, Norton Air Force Base, San Bernardino, California. [2070]

_____ 1997. Explosive Ordnance Disposal Proficiency Training Range (Area of Concern 73) Clearance Report, Norton Air Force Base, San Bernardino, California. [2353]

Chem-Nuclear Systems, Inc., 1992. Final Project Report, Draft for the Investigation of the Norton Air Force Base Installation Restoration Program Site 20, January. [688]

Dutcher, L.C., and A.A. Garrett, 1963. Geologic and Hydrologic Features of the San Bernardino Area, California, U.S. Geological Survey Water Supply Paper 1419, 109 p.

Earth Tech, 1994a. Final Norton AFB CBA OU Remedial Investigation Report Supplement Off-Base Trichloroethylene Plume Investigation Phase II Report, prepared for Air Force Center for Environmental Excellence.

_____ 1994b. Off-Base Water Supply Contingency Policy Groundwater Sampling Program, Sampling and Analysis Plan, Norton Air Force Base, San Bernardino, California, prepared for Air Force Center for Environmental Excellence.

_____ 1995. Technical Memorandum Groundwater Sampling Procedures, Norton Air Force Base, Comprehensive Groundwater Monitoring Program, prepared for Air Force Center for Environmental Excellence. July.

_____ 1996. Final Closure Report, Building 658 and IRP Site 9 TCE Source Area Remediation Central Base Area Operable Unit, April 26. [AR1817]

_____ 1997a. Soil Vapor Extraction Closure Report – Building 673 and 763, TCE Source Area Remedial Action, Central Base Area Operable Unit, Norton AFB, October. [2394]

_____ 1997b. Work Plan for Remediation of Lead-Contaminated Soil, Small Arms Range Norton Air Force Base, San Bernardino, California. [2191]

_____ 2001a. Technical Memo October 2000, Groundwater Sampling Data Results Summary Report, Comprehensive Groundwater Monitoring Program.

_____ 2001b. Final Sampling and Analysis Plan, prepared for Basewide Groundwater Monitoring Program and Water Supply Contingency Policy Groundwater Sampling Program, Norton Air Force Base. October.

_____ 2002. Ninth Annual Groundwater Data Trends Report and Long-Term Groundwater Monitoring Plan.

_____ 2003. Tenth Annual Groundwater Data Trends Report and Long-Term Groundwater Monitoring Plan, December.

_____ 2004a. Installation Restoration Program Closure Report, IRP Site 12, prepared for Air Force Real Property Agency, October. [4047]

_____ 2004b. Installation Restoration Program Draft-Final Closure Report, AOC 40, Former Golf Course Maintenance Area, prepared for Air Force Real Property Agency, December. [4063]

_____ 2005a. Basewide OU ROD, Former Norton Air Force Base, California.

_____ 2005b. Letter Report, Request for Closure Central Base Area and Base Boundary Pump Treat Systems, April.

_____ 2005c. Eleventh Annual Groundwater Data Trends Report and Long-Term Groundwater Monitoring Plan, January.

_____ 2005d. Twelfth Annual Groundwater Data Trends Report and Long-Term Groundwater Monitoring Plan.

Ecology and Environment, Inc., 1987. Installation Restoration Program, Phase II – Confirmation/Quantification, Stage 2. Final Report, May 1986-September 1987. [84-89]

_____ 1989. Installation Restoration Program, Stage 3, Final Report, September 1987-December 1988, Norton Air Force Base, California. [253-259]

Hardt, W., and C. Hutchenson, 1980. Development and Use of a Mathematical Model of the San Bernardino Valley Ground-Water Basin, California, U.S. Geological Survey Open-File Report 80-576, p. 1-10.

IT Corporation, 1994. Site 20 Bunker Investigation Work Plan [1218]

_____ 1996. Final Basewide Soil Characterization Report, Basewide Radionuclide Characterization, Norton Air Force Base, California. [1878]

_____ 1998. Final IRP Site 2 Landfill Closure and Postclosure Plan, Norton Air Force Base, California, prepared for U.S. Air Force Base Conversion Agency. January.

_____ 1999. Final Basewide Soil and Radionuclide Characterization Report, Building 752 Pipeline Removal Project, Norton AFB, California (draft). [3007]

McLaren-Hart, 1991a. Project Work Plan Contaminated Soil Excavation and On-Site Vapor Extraction Treatment [474]

_____ 1991b. Results of Soil Disposal Characterization and Evaluation of Treatment and/or Disposal Options. [557]

_____ 1992. Soil Treatment Cell Post Decommissioning Sampling Results. [727]

Mendenhall, 1905. The Hydrology of San Bernardino Valley, California, Geological Survey Water Supply Paper 142, p. 1-14.

Morrison Knudsen Corporation, 1996a. *RCRA Closure Plan Phase II for Norton Air Force Base Air Combat Services Unit.* [2272]

_____ 1996b. *Norton Operating Location Air Combat Camera Services Closure Certification Report.* [1959-1960]

Ogden Environmental and Energy Services Company, Inc., 1996a. Final Engineering Evaluation/Cost Analysis, Sites 13, 14, and 22, Norton Air Force Base, San Bernardino, California, March. [1640]

_____ 1996b. IRP Site 13 Bench-Scale Test Plan and Bench-Scale Test Sampling and Analysis Plan. 1914]

_____ 1997. Final Closure Report, IRP Sites 13 and 14, Norton Air Force Base, California, Former Industrial Waste Treatment Plant Sludge Disposal Area and Waste Pit Number 4, July. [2310-2315]

Ruffner, J.A. 1985. Climates of the States: National Oceanic and Atmospheric Administration Narrative Summaries, Tables, and Maps for Each State. Gale Research Company: Detroit, MI.

Site Characterization Process Action Team, 1994. Long-Term Ground Water Monitoring Program Guidance, prepared for The California Base Closure Environmental Committee.

U.S. Air Force, 1993a. Central Base Area Operable Unit Record of Decision.

_____ 1993b. Water Supply Contingency Policy.

_____ 1996a. RCRA Closure of the Defense Reutilization and Marketing Office, Norton Air Force Base Hazardous Material/Waste Storage Facility.

_____ 1996b. Action Memorandum, Sites 13, 14, and 22, Norton Air Force Base, San Bernardino, California. [1666]

_____ 1996c. Final Action Memorandum for Parcel I-3, Norton Air Force Base. [1778]

_____ 1996d. Final Decision Document to Support No Further Response Action Planned at IRP Sites 7, 11, 15, and 18. [1774]

_____ 1997a. Action Memorandum Areas of Concern 4, 18, 33, 39, 40, and 70, Norton Air Force Base, San Bernardino, California. [2298]

_____ 1997b. Interim Record of Decision, OU 3, IRP Site 19, Waste Drum Storage Area No. 1. USAF-HQ, U.S. Air Force Base Conversion Agency, Norton AFB. July 21.

_____ 1999. Final Former Norton Air Force Base Central Base Area Operable Unit Five-Year CERCLA Review. [AR3027]

_____ 2000. Minutes of the BRAC Cleanup Team Meeting, April 18, 2000. May 11.

U.S. Department of Energy, 1996. Requirements for Quality Control of Analytical Data (DOE/HWP-65/R2), prepared by the HAZWRAP Environmental Management and Enrichment Facilities and the Oak Ridge K-25 Site Customer Services Division. September.

Woodruff, G. A. 1980. Soil Survey of San Bernardino County Southwestern Part, California. United States Department of Agriculture, Soil Conservation Service in Cooperation with University of California Agricultural Experiment Station, GPO: Washington, DC.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A

SITE INSPECTION FORMS

THIS PAGE INTENTIONALLY LEFT BLANK

INSPECTION CHECKLIST

I. SITE INFORMATION	
Site name: TCE GW Plume	**Date of inspection:** 09 - June - 2005
Location and Region: Former Norton AFB Region 9	**EPA ID:** CA 4570024345
Agency, office, or company leading the five-year review: Earth Tech, Inc.	**Weather/temperature:** partly cloudy 70
Remedy Includes: (Check all that apply) [ ] Landfill cover/containment [ ] Access controls [X] Institutional controls [ ] Surface water collection and treatment [X] Other Groundwater Monitoring	[ ] Monitored natural attenuation [ ] Groundwater containment [ ] Vertical barrier walls [X] Groundwater pump and treatment
Attachments: [X] Inspection team roster attached	[ ] Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** N/A (Name) _____ (Title) _____ (Date) _____

Interviewed [ ] at site [ ] at office [ ] by phone. Phone no: _____

Problems, suggestions; _ Report attached _____

2. **O&M staff** N/A (Name) _____ (Title) _____ (Date) _____

Interviewed [ ] at site [ ] at office [ ] by phone. Phone no: _____

Problems, suggestions; _ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Air Force Real Property Agency
Contact Phil Mook (Name) BRAC Coordinator (Title) 5/11/05 (Date) 800-655-7200 x209 (Phone no.)

Problems; suggestions: _____

[X] Report attached _____

Agency City of Riverside Public Utilities
Contact Principal Water Engineer (Name) Zahra Panahi (Title) 5/11/05 (Date) 951-826-5612 (Phone no.)

Problems; suggestions: _____

[X] Report attached _____

Agency San Bernardino International Airport
Contact Eric Ray (Name) Sr. Airport Op. Officer (Title) 5/13/05 (Date) 909-382-4100 x223 (Phone no.)

Problems; suggestions: _____

[X] Report attached _____

4. **Other interviews** (optional) [X] Report attached.

a. James Gourley, Inland Valley Development Agency (5/13/05) 425-656-2145

b. John Magness, Sr. VP, Hillwood (5/16/05) 909-382-2154

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

[ ] O&M manual	[ ] Readily available	[ ] Up to date	[x] N/A
[ ] As-built drawings	[ ] Readily available	[ ] Up to date	[x] N/A
[ ] Maintenance logs	[ ] Readily available	[ ] Up to date	[x] N/A

Remarks _____

2. **Site-Specific Health and Safety Plan**

[ ] O&M manual	[ ] Readily available	[ ] Up to date	[x] N/A
[ ] Emergency response plan	[ ] Readily available	[ ] Up to date	[x] N/A

Remarks _____

3. **O&M and OSHA Training Records** [X] Readily available [ ] Up to date [ ] N/A

Remarks _____

4. **Permits and Service Agreements**

[ ] Air discharge permit	[ ] Readily available	[ ] Up to date	[x] N/A
[ ] Effluent discharge	[ ] Readily available	[ ] Up to date	[x] N/A
[ ] Waste disposal, POTW	[ ] Readily available	[ ] Up to date	[x] N/A
[ ] Other permits	[ ] Readily available	[ ] Up to date	[x] N/A

Remarks _____

5. **Gas Generation Records** [ ] Readily available [ ] Up to date [x] N/A

Remarks _____

6. **Settlement Monument Records** [ ] Readily available [ ] Up to date [x] N/A

Remarks _____

7. **Groundwater Monitoring Records** [x] Readily available [ ] Up to date [ ] N/A

Remarks _____

8. **Leachate Extraction Records** [ ] Readily available [ ] Up to date [x] N/A

Remarks _____

9. **Discharge Compliance Records**

[ ] Air	[ ] Readily available	[ ] Up to date	[x] N/A
[ ] Water (effluent)	[ ] Readily available	[ ] Up to date	[x] N/A

Remarks _____

10. **Daily Access/Security Logs** [ ] Readily available [ ] Up to date [x] N/A

Remarks _____

IV. O&M COSTS

1. **O&M Organization** N/A

[ ] State (in-house) [ ] Contractor (for State)
[ ] PRP (in-house) [ ] Contractor (for PRP)
[ ] Federal Facility in-house [ ] Contractor (for Federal Facility)
[ ] Other _____

2. **O&M Cost Records** N/A

[ ] Readily available [ ] Up to date
[ ] Funding mechanism/agreement in place

Original O&M cost estimate_____ [ ] Breakdown attached

Total annual cost by year for review period if available

From _____ To_____ $_____ [ ] Breakdown attached
Date Date Total cost

From _____ To_____ $_____ [ ] Breakdown attached
Date Date Total cost

From _____ To_____ $_____ [ ] Breakdown attached
Date Date Total cost

From _____ To_____ $_____ [ ] Breakdown attached
Date Date Total cost

From _____ To_____ $_____ [ ] Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons: _____

N/A

V. ACCESS AND INSTITUTIONAL CONTROLS [X] Applicable [ ] N/A

A. Fencing

1. **Fencing damaged** [ ] Location shown on site map [ ] Gates secured [X] N/A

Remarks _____

B. Other Access Restrictions

1. **Signs and other security measures** [ ] Location shown on site map [X] N/A

Remarks _____

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented	[ ] Yes	[X] No	[X] N/A
Site conditions imply ICs not being fully enforced	[ ] Yes	[X] No	[X] N/A

Type of monitoring (*e.g.*, self-reporting, drive by) _____

Frequency daily

Responsible party/agency SBIAA

Contact Eric Ray _____ _____ _____

Name Title Date Phone no.

Reporting is up-to-date	[ ] Yes	[ ] No	[✓] N/A
Reports are verified by the lead agency	[ ] Yes	[ ] No	[ ] N/A
Specific requirements have been met (in deed or decision documents)	[✓] Yes	[ ] No	[ ] N/A
Violations have been reported	[ ] Yes	[ ] No	[✓] N/A
Other problems or suggestions:	[ ] Report attached		

2. **Adequacy** [✓] ICs are adequate [ ] ICs are inadequate [ ] N/A

Remarks _____

D. General

1. **Vandalism/trespassing** [ ] Location shown on site map [✓] No vandalism evident

Remarks _____

2. **Land use changes on site** [X] N/A

Remarks _____

3. **Land use changes off site** [X] N/A

Remarks _____

VI. GENERAL SITE CONDITIONS

A. Roads [X] Applicable [ ] N/A

1. **Roads damaged** [X] Location shown on site map [✓] Roads adequate [ ] N/A

Remarks

B. Other Site Conditions

Remarks

No other conditions of note

VII. LANDFILL COVERS [ ] Applicable [X] N/A	
A.	Landfill Surface
B.	Benches
C.	Letdown Channels
D.	Cover Penetrations
E.	Gas Collection and Treatment
F.	Cover Drainage Layer
G.	Detention/Sedimentation Ponds
H.	Retaining Walls
I.	Perimeter Ditches/Off-Site Discharge

VIII. VERTICAL BARRIER WALLS [ ] Applicable [X] N/A

1. **Settlement** [ ] Location shown on site map [ ] Settlement not evident

   Areal extent_____ Depth_____

   Remarks_____

2. **Performance Monitoring** Type of monitoring_____

   [ ] Performance not monitored

   Frequency_____ [ ] Evidence of breaching

   Head differential_____

   Remarks_____

IX. GROUNDWATER/SURFACE WATER REMEDIES [ ] Applicable [ ] N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines [ ] Applicable [ ] N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
   [✓] Good condition [ ] All required wells properly operating [ ] Needs Maintenance [ ] N/A
   Remarks _____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   [✓] Good condition [ ] Needs Maintenance
   Remarks _____

3. **Spare Parts and Equipment**
   [ ] Good condition [✓] Readily available [ ] Requires upgrade [ ] Needs to be provided
   Remarks _____

B. Surface Water Collection Structures, Pumps, and Pipelines [ ] Applicable [X] N/A

1. **Collection Structures, Pumps, and Electrical**
   [ ] Good condition [ ] Needs Maintenance
   Remarks _____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   [ ] Good condition [ ] Needs Maintenance
   Remarks _____

3. **Spare Parts and Equipment**
   [ ] Good condition [ ] Readily available [ ] Requires upgrade [ ] Needs to be provided
   Remarks _____

IX. GROUNDWATER/SURFACE WATER REMEDIES (Continued)

C. Treatment System : Rauh 5 well-head system [ ] Applicable [ ] N/A

1. **Treatment Train** (Check components that apply)
   [ ] Metals removal [ ] Oil/water separation [ ] Bioremediation
   [ ] Air stripping [✓] Carbon adsorbers
   [ ] Filters _____
   [ ] Additive (*e.g.*, chelation agent, flocculent) _____
   [ ] Others _____
   [✓] Good condition [ ] Needs Maintenance [ ] Sampling ports properly marked and functional
   [ ] Equipment properly identified [ ] Sampling/maintenance log displayed and up to date

   Quantity treated annually: Groundwater _____ (gallons) Surface water _____ (gallons)
   Remarks _____

2. **Electrical Enclosures and Panels** (properly rated and functional)
   [ ] N/A [ ] Good condition [ ] Needs maintenance
   Remarks _____

3. **Tanks, Vaults, Storage Vessels**
   [ ] N/A [✓] Good condition [ ] Needs maintenance [ ] Proper secondary containment
   Remarks _____

4. **Discharge Structure and Appurtenances**
   [✓] N/A [ ] Good condition [ ] Needs maintenance
   Remarks _____

5. **Treatment Building(s)**
   [✓] N/A [ ] Good condition (especially roof and doorways) [ ] Needs repair
   Remarks _____

6. **Monitoring Wells** (pump and treat remedy)
   [✓] Properly secured/locked [ ] Functioning [✓] Routinely sampled [✓] Good condition
   [✓] All required wells located [ ] Needs Maintenance [ ] N/A
   Remarks _____

IX. GROUNDWATER/SURFACE WATER REMEDIES (Continued)

D. Monitoring Results

1. **Monitoring Data**

[X] Is routinely submitted on time [X] Is of acceptable quality

Remarks _____

1. **Results.** Monitoring data suggests:

[X] Groundwater plume is effectively contained [X] Contaminant concentrations are declining

Remarks _____

E. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)

[ ] Properly secured/locked [ ] Functioning [ ] Routinely sampled [ ] Good condition

[ ] All required wells located [ ] Needs Maintenance [X] N/A

Remarks _____

X. OTHER REMEDIES

If there are remedies applied at the site that are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

N/A

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

Remedy was extremely effective, monitoring shows continued effectiveness.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Treatment process no longer active; O & M not required.

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

No problems identified.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Monitoring plan/schedule assessed and modified as needed on an annual basis.

INSPECTION CHECKLIST

I. SITE INFORMATION	
Site name: IRP Site 19	**Date of inspection:** 09-June-2005
Location and Region: Former Norton AFB EPA Region 9	**EPA ID:** CA 4570024345
Agency, office, or company leading the five-year review: Earth Tech, Inc.	**Weather/temperature:** partly cloudy 70
Remedy Includes: (Check all that apply)	
[ ] Landfill cover/containment	[ ] Monitored natural attenuation
[ ] Access controls	[ ] Groundwater containment
[X] Institutional controls	[ ] Vertical barrier walls
[ ] Surface water collection and treatment	[ ] Groundwater pump and treatment
[ ] Other _____	
Attachments: [X] Inspection team roster attached	[ ] Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** N/A (Name) _____ (Title) _____ (Date) _____

Interviewed [ ] at site [ ] at office [ ] by phone. Phone no: _____

Problems, suggestions; _ Report attached _____

2. **O&M staff** N/A (Name) _____ (Title) _____ (Date) _____

Interviewed [ ] at site [ ] at office [ ] by phone. Phone no: _____

Problems, suggestions; _ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Air Force Real Property Agency
Contact Phil Mook (Name) BRAC Coordinator (Title) 5/11/05 (Date) 800-655-7200 (Phone no.) x 209

Problems; suggestions: _____

[X] Report attached _____

Agency Public Utilities, City of Riverside
Contact Zahra Panahi, Prin. Water Engr. (Name, Title) 5/11/05 (Date) 951-826-5612 (Phone no.)

Problems; suggestions: _____

[X] Report attached _____

Agency San Bernardino International Airport
Contact Eric Ray, Sr. Airport Oper. Office (Name, Title) 5/13/05 (Date) 909-382-4100 (Phone no.) x 223

Problems; suggestions: _____

[X] Report attached _____

4. **Other interviews** (optional) [X] Report attached.

a) James Gourley, Inland Valley Development Agency (5/13/05)
425-656-2145

b). John Magness, Senior Vice President, Hillwood (5/16/05)
909-382-2154

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

[ ] O&M manual	[ ] Readily available	[ ] Up to date	[X] N/A
[ ] As-built drawings	[ ] Readily available	[ ] Up to date	[X] N/A
[ ] Maintenance logs	[ ] Readily available	[ ] Up to date	[X] N/A

Remarks _____

2. **Site-Specific Health and Safety Plan**

[ ] O&M manual	[ ] Readily available	[ ] Up to date	[X] N/A
[ ] Emergency response plan	[ ] Readily available	[ ] Up to date	[X] N/A

Remarks _____

3. **O&M and OSHA Training Records** [ ] Readily available [ ] Up to date [X] N/A

Remarks _____

4. **Permits and Service Agreements**

[ ] Air discharge permit	[ ] Readily available	[ ] Up to date	[X] N/A
[ ] Effluent discharge	[ ] Readily available	[ ] Up to date	[X] N/A
[ ] Waste disposal, POTW	[ ] Readily available	[ ] Up to date	[X] N/A
[ ] Other permits	[ ] Readily available	[ ] Up to date	[X] N/A

Remarks _____

5. **Gas Generation Records** [ ] Readily available [ ] Up to date [X] N/A

Remarks _____

6. **Settlement Monument Records** [ ] Readily available [ ] Up to date [X] N/A

Remarks _____

7. **Groundwater Monitoring Records** [ ] Readily available [ ] Up to date [X] N/A

Remarks _____

8. **Leachate Extraction Records** [ ] Readily available [ ] Up to date [X] N/A

Remarks _____

9. **Discharge Compliance Records**

[ ] Air	[ ] Readily available	[ ] Up to date	[X] N/A
[ ] Water (effluent)	[ ] Readily available	[ ] Up to date	[X] N/A

Remarks _____

10. **Daily Access/Security Logs** [ ] Readily available [ ] Up to date [X] N/A

Remarks _____

IV. O&M COSTS

1. **O&M Organization** N/A

[ ] State (in-house) [ ] Contractor (for State)
[ ] PRP (in-house) [ ] Contractor (for PRP)
[ ] Federal Facility in-house [ ] Contractor (for Federal Facility)
[ ] Other _____

2. **O&M Cost Records** N/A

[ ] Readily available [ ] Up to date
[ ] Funding mechanism/agreement in place

Original O&M cost estimate_____ [ ] Breakdown attached

Total annual cost by year for review period if available

From _____ To_____ $_____ [ ] Breakdown attached
Date Date Total cost

From _____ To_____ $_____ [ ] Breakdown attached
Date Date Total cost

From _____ To_____ $_____ [ ] Breakdown attached
Date Date Total cost

From _____ To_____ $_____ [ ] Breakdown attached
Date Date Total cost

From _____ To_____ $_____ [ ] Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons: _____

N/A

V. ACCESS AND INSTITUTIONAL CONTROLS [X] Applicable [ ] N/A

A. Fencing

1. **Fencing damaged** [ ] Location shown on site map [✓] Gates secured [ ] N/A
   Remarks _____

B. Other Access Restrictions

1. **Signs and other security measures** [ ] Location shown on site map [X] N/A
   Remarks _____

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented	[ ] Yes	[✓] No	[ ] N/A
Site conditions imply ICs not being fully enforced	[ ] Yes	[✓] No	[ ] N/A

Type of monitoring (*e.g.*, self-reporting, drive by) _____
Frequency daily by SBIAA
Responsible party/agency AFRPA
Contact _____ _____ _____ _____
Name Title Date Phone no.

Reporting is up-to-date	[ ] Yes	[ ] No	[✓] N/A
Reports are verified by the lead agency	[ ] Yes	[ ] No	[✓] N/A
Specific requirements have been met (in deed or decision documents)	[✓] Yes	[ ] No	[ ] N/A
Violations have been reported	[ ] Yes	[ ] No	[✓] N/A

Other problems or suggestions: [ ] Report attached
_____
_____

2. **Adequacy** [X] ICs are adequate [ ] ICs are inadequate [ ] N/A
   Remarks _____
   _____

D. General

1. **Vandalism/trespassing** [ ] Location shown on site map [✓] No vandalism evident
   Remarks _____

2. **Land use changes on site** [✓] N/A
   Remarks _____

3. **Land use changes off site** [✓] N/A
   Remarks _____

VI. GENERAL SITE CONDITIONS

A. Roads [✓] Applicable [ ] N/A

1. **Roads damaged** [ ] Location shown on site map [✓] Roads adequate [ ] N/A

Remarks

B. Other Site Conditions

Remarks

No other conditions of note.

VII. LANDFILL COVERS [ ] Applicable [X] N/A	
A.	Landfill Surface
B.	Benches
C.	Letdown Channels
D.	Cover Penetrations
E.	Gas Collection and Treatment
F.	Cover Drainage Layer
G.	Detention/Sedimentation Ponds
H.	Retaining Walls
I.	Perimeter Ditches/Off-Site Discharge

VIII. VERTICAL BARRIER WALLS [ ] Applicable [X] N/A

1. **Settlement** [ ] Location shown on site map [ ] Settlement not evident

   Areal extent_____ Depth_____

   Remarks_____

2. **Performance Monitoring** Type of monitoring_____

   [ ] Performance not monitored

   Frequency_____ [ ] Evidence of breaching

   Head differential_____

   Remarks_____

IX. GROUNDWATER/SURFACE WATER REMEDIES	[ ] Applicable	[X] N/A
A. Groundwater Extraction Wells, Pumps, and Pipelines	[ ] Applicable	[ ] N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
   [ ] Good condition [ ] All required wells properly operating [ ] Needs Maintenance [ ] N/A
   Remarks _____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   [ ] Good condition [ ] Needs Maintenance
   Remarks _____

3. **Spare Parts and Equipment**
   [ ] Good condition [ ] Readily available [ ] Requires upgrade [ ] Needs to be provided
   Remarks _____

B. Surface Water Collection Structures, Pumps, and Pipelines [ ] Applicable [ ] N/A

1. **Collection Structures, Pumps, and Electrical**
   [ ] Good condition [ ] Needs Maintenance
   Remarks _____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   [ ] Good condition [ ] Needs Maintenance
   Remarks _____

3. **Spare Parts and Equipment**
   [ ] Good condition [ ] Readily available [ ] Requires upgrade [ ] Needs to be provided
   Remarks _____

IX. GROUNDWATER/SURFACE WATER REMEDIES (Continued)

C. Treatment System [ ] Applicable [ ] N/A

1. **Treatment Train** (Check components that apply)
   [ ] Metals removal [ ] Oil/water separation [ ] Bioremediation
   [ ] Air stripping [ ] Carbon adsorbers
   [ ] Filters _____
   [ ] Additive (*e.g.*, chelation agent, flocculent) _____
   [ ] Others _____
   [ ] Good condition [ ] Needs Maintenance [ ] Sampling ports properly marked and functional
   [ ] Equipment properly identified [ ] Sampling/maintenance log displayed and up to date

   Quantity treated annually: Groundwater _____ (gallons) Surface water _____ (gallons)
   Remarks _____

2. **Electrical Enclosures and Panels** (properly rated and functional)
   [ ] N/A [ ] Good condition [ ] Needs maintenance
   Remarks _____

3. **Tanks, Vaults, Storage Vessels**
   [ ] N/A [ ] Good condition [ ] Needs maintenance [ ] Proper secondary containment
   Remarks _____

4. **Discharge Structure and Appurtenances**
   [ ] N/A [ ] Good condition [ ] Needs maintenance
   Remarks _____

5. **Treatment Building(s)**
   [ ] N/A [ ] Good condition (especially roof and doorways) [ ] Needs repair
   Remarks _____

6. **Monitoring Wells** (pump and treat remedy)
   [ ] Properly secured/locked [ ] Functioning [ ] Routinely sampled [ ] Good condition
   [ ] All required wells located [ ] Needs Maintenance [ ] N/A
   Remarks _____

IX. GROUNDWATER/SURFACE WATER REMEDIES (Continued)

D. Monitoring Results

1. **Monitoring Data**

[ ] Is routinely submitted on time [ ] Is of acceptable quality

Remarks _____

1. **Results.** Monitoring data suggests:

[ ] Groundwater plume is effectively contained [ ] Contaminant concentrations are declining

Remarks _____

E. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)

[ ] Properly secured/locked [ ] Functioning [ ] Routinely sampled [ ] Good condition

[ ] All required wells located [ ] Needs Maintenance [ ] N/A

Remarks _____

X. OTHER REMEDIES

If there are remedies applied at the site that are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

N/A

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

Remedy continues to be effective in limiting access to contaminants and isolating them from exposure pathways

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

N/A

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

No problems identified

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

N/A

Former Norton AFB
Central Base Area OU

INSPECTION SIGN-IN
09-June-2005

Name	Affiliation	Contact Information (phone and/or e-mail)
1 Philip Mook	AFRPA	916 643.0830 x 209
2 Stephen Nlou	DTSC	714 484 5458
3 James Chang	EPA	415.972.3193
4 Paul Peterson	EARTH TECH	909 554 5075
5 Alain Sharp	Earth Tech	909 554 5053
6 Linda Spargo	Earth Tech	909-554 5049
7		
8		
9		
10		
11		
12		
13		
14		
15		

APPENDIX B

INTERVIEW FORMS

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX B

INTERVIEW FORMS

INTERVIEW DOCUMENTATION FORM			
The following is a list of individuals interviewed for this five-year review. See the attached contact record(s) for a detailed summary of the interviews.			
Name	**Title/Position**	**Organization**	**Date**
Phil Mook	BRAC Regional Environmental Coordinator	Air Force Real Property Agency	May 11, 2005
Name	**Title/Position**	**Organization**	**Date**
Zahra Panahi, Ph.D.	Principal Water Engineer	Water Engineering, City of Riverside Public Utilities	May 11, 2005
Name	**Title/Position**	**Organization**	**Date**
C. Eric Ray	Senior Airport Operations Officer	San Bernardino International Airport Authority	May 13, 2005
Name	**Title/Position**	**Organization**	**Date**
James Gourley	Consultant	Inland Valley Development Agency	May 13, 2005
Name	**Title/Position**	**Organization**	**Date**
John Magness	Senior Vice President	Hillwood	May 16, 2005
Name	**Title/Position**	**Organization**	**Date**
Name	**Title/Position**	**Organization**	**Date**

RECORD OF CONVERSATION

Site Name: Norton AFB NPL Site		**EPA ID No.:** CA4570024345	
Subject: Central Base Area OU		**Time:** 1000	**Date:** 5/11/05
Type: [X] Telephone [ ] Visit [ ] Other **Location of Visit:** Not applicable		[ ] Incoming	[X] Outgoing
Contact Made By: Derrick Coleman, Linda Spitzer, William Muir			
Title: Senior Professionals	**Organization:** Earth Tech, Inc.		
Individual Contacted: Philip H. Mook, Jr.			
Title: BRAC Regional Environmental Coordinator	**Organization:** Air Force Real Property Agency		
Telephone No: 1-800-655-7200, ext. 209 **Fax No:** 916-643-5880 **E-Mail Address:** philip.mook@afrpa.pentagon.af.mil	**Street Address:** 3411 Olson Street **City, State, Zip:** McClellan, CA 95652		

Summary of Conversation

1. What effect have remedial actions had on the surrounding community?

   The most noticeable immediate affect was positive that we addressed groundwater concerns by Water Supply Contingency Policy (WSCP); sampling of private wells was done to ensure that the Norton AFB contamination was not delivered in water to the community. We were still sampling private wells until 1 year ago. Very early on, efforts were made to put wellhead treatment at Raub 5 as part of the WSCP. There were no negative effects.

2. Are you aware of any community concerns over the remedial actions in the Norton AFB CBA OU? If so, please provide details.

   No.

3. Are you aware of any incidents of vandalism and trespassing, or emergency response by local authorities at the Norton AFB CBA OU? If so, please provide details.

   No.

4. Do you feel well informed about the cleanup activities and progress at the Norton AFB CBA OU?

   Yes.

Individual Contacted: Philip H. Mook, Jr.			
Title:	BRAC Regional Environmental Coordinator	**Organization:**	Air Force Real Property Agency

5. How would you characterize the performance of the remedial action(s) implemented at this location (i.e., successful, failed, or other)?

   The CBA remedies were remarkably successful to the point of being one of the very examples where groundwater remedial actions have been successful in reaching cleanup goals of the MCL.

6. What were the primary difficulties in implementing remedial actions here?

   I'm not sure we had any real difficulties--in hindsight just the cost; it was very expensive. No geological problems or nature and extent problems were encountered.

7. What are your recommendations for completing the groundwater plume cleanup, and how would you establish criteria to demonstrate completion?

   We already have demonstrated for the groundwater component that we are finished with the exception of the WSCP, which has very objective criteria for how to close out of the WSCP. The measures of completion are in place for the on-base portion of the plume. EPA is evaluating the data now so hopefully they will concur.

8. Has anything changed with the status of the cleanup of deep soils at Buildings 658 and 763 during the past five years?

   No. The only thing that has changed is the condition of the aquifer, which has improved with time, a positive change. Time has reinforced that the other three components were successfully addressed in the late 1990s. Clearly they don't need to be considered in future 5-year reviews. If there was a reason to look at them it would come through the review of the groundwater component. If increasing trends of contamination in groundwater are found, you would investigate further. As a separate component they don't need to be formally addressed any more but they would be part of the groundwater component. The next 5-year review will probably look at the groundwater component one more time, but mainly that review will be for the Basewide Record of Decision.

9. Has anything changed with the status of the clean-up of shallow soils at Buildings 673 and 763 during the past five years?

   No.

10. Has anything changed with the status of the clean-up of shallow soils at Site 9 (Building 763) during the past five years?

    No.

RECORD OF CONVERSATION

Site Name: Norton AFB NPL Site		**EPA ID No.:** CA4570024345	
Subject: Central Base Area OU		**Time:** 1400	**Date:** 5/11/05
Type: [X] Telephone [ ] Visit [ ] Other **Location of Visit:** Not applicable		[ ] Incoming	[X] Outgoing
Contact Made By: Derrick Coleman, Linda Spitzer			
Title: Senior Professionals	**Organization:** Earth Tech, Inc.		
Individual Contacted: Zahra Panahi, Ph.D.			
Title: Principal Water Engineer	**Organization:** City of Riverside, Public Utilities Department, Water Engineering		
Telephone No: 951-826-5612 **Fax No:** 951-826-2498 **E-Mail Address:** zpanahi@riversideca.gov	**Street Address:** 3900 Main Street **City, State, Zip:** Riverside, CA 92504		

Summary of Conversation

1. What effect have remedial actions had on the surrounding community?

   Groundwater contamination as decreased and the plume has shrunk a lot--lots of improvement. The buildings and the soil have been cleaned up. Since the area is in San Bernardino (outside Riverside area), our customers don't have direct involvement and are generally unaware of the contamination.

2. Are you aware of any community concerns over the remedial actions in the Norton AFB CBA OU? If so, please provide details.

   No.

3. Are you aware of any incidents of vandalism and trespassing, or emergency response by local authorities at the Norton AFB CBA OU? If so, please provide details.

   No.

4. Do you feel well informed about the cleanup activities and progress at the Norton AFB CBA OU?

   Yes. We get the newsletter and have been involved in development and implementation of the cleanup.

Individual Contacted: Zahra Panahi, Ph.D.	
Title: Principal Water Engineer	**Organization:** City of Riverside, Public Utilities Department, Water Engineering
5. How would you characterize the performance of the remedial action(s) implemented at this location (i.e., successful, failed, or other)? We believe it has been very successful. We receive a map of the plume showing how much it has shrunk in size and concentration and we get groundwater monitoring reports.	
6. What were the primary difficulties in implementing remedial actions here? I don't recall any.	
7. What are your recommendations for completing the groundwater plume cleanup, and how would you establish criteria to demonstrate completion? The Air Force should continue monitoring as well as pumping and treating at City of Riverside wells. Our criteria is nondetect, over a period of time not just one sampling, to ensure contamination is gone.	
8. Has anything changed with the status of the cleanup of deep soils at Buildings 658 and 763 during the past five years? I have no knowledge of any changes.	
9. Has anything changed with the status of the clean-up of shallow soils at Buildings 673 and 763 during the past five years? I have no knowledge of any changes.	
10. Has anything changed with the status of the clean-up of shallow soils at Site 9 (Building 763) during the past five years? I have no knowledge of any changes.	
General Comment: Cleanup was fast and good, and did not take as many years to get where we are as originally predicted. I'm very pleased.	

RECORD OF CONVERSATION

Site Name: Norton AFB NPL Site		**EPA ID No.:** CA4570024345	
Subject: Central Base Area OU		**Time:** 1400	**Date:** 5/13/05
Type: [X] Telephone [ ] Visit [ ] Other **Location of Visit:** Not applicable		[ ] Incoming	[X] Outgoing
Contact Made By: Derrick Coleman, Linda Spitzer			
Title: Senior Professionals	**Organization:** Earth Tech, Inc.		
Individual Contacted: C Eric Ray			
Title: Senior Airport Operations Officer	**Organization:** San Bernardino International Airport Authority		
Telephone No: 909-382-4100, ext.223 **Fax No:** 909-382-4106 **E-Mail Address:** eray@sbdairport.com	**Street Address:** 294 South Leland Norton Way **City, State, Zip:** San Bernardino, CA 92408		

Summary of Conversation

1. What effect have remedial actions had on the surrounding community?

   Cleanup action has been somewhat of a minor inconvenience to our day-to-day redevelopment efforts of the property.

2. Are you aware of any community concerns over the remedial actions in the Norton AFB CBA OU? If so, please provide details.

   No.

3. Are you aware of any incidents of vandalism and trespassing, or emergency response by local authorities at the Norton AFB CBA OU? If so, please provide details.

   No.

4. Do you feel well informed about the cleanup activities and progress at the Norton AFB CBA OU?

   Yes.

5. How would you characterize the performance of the remedial action(s) implemented at this location (i.e., successful, failed, or other)?

   A complete success.

Individual Contacted: C Eric Ray	
Title: Senior Airport Operations Officer	**Organization:** San Bernardino International Airport Authority
6. What were the primary difficulties in implementing remedial actions here? Limited difficulty. We had to work around the pump-and-treat facilities installed. Minor inconvenience.	
7. What are your recommendations for completing the groundwater plume cleanup, and how would you establish criteria to demonstrate completion? I don't have the technical expertise to answer that. I trust that the regulators and the work that you folks do for the Air Force are bringing everything to a clean enough standard to meet the health and safety needs. We just trust the regulators to ensure it is being cleaned sufficiently.	
8. Has anything changed with the status of the cleanup of deep soils at Buildings 658 and 763 during the past five years? No.	
9. Has anything changed with the status of the clean-up of shallow soils at Buildings 673 and 763 during the past five years? No.	
10. Has anything changed with the status of the clean-up of shallow soils at Site 9 (Building 763) during the past five years? No.	

RECORD OF CONVERSATION

Site Name: Norton AFB NPL Site		**EPA ID No.:** CA4570024345	
Subject: Central Base Area OU		**Time:** 1600	**Date:** 5/13/05
Type: [X] Telephone [ ] Visit [ ] Other **Location of Visit:** Not applicable		[ ] Incoming	[X] Outgoing
Contact Made By: Derrick Coleman, Linda Spitzer			
Title: Senior Professionals	**Organization:** Earth Tech, Inc.		
Individual Contacted: James Gourley			
Title: Consultant	**Organization:** Inland Valley Development Agency		
Telephone No: 425-656-2145 **Fax No:** **E-Mail Address:** arrow.head2@verizon.net	**Street Address:** 294 South Leland Norton Way **City, State, Zip:** San Bernardino, CA 92408		

Summary of Conversation

1. What effect have remedial actions had on the surrounding community?

   There has been little effect on the surrounding community. Most of the impact has been on base. The CBA is almost closed. However, the monitoring, injection, and extraction wells needed for the base have limited development in the past. They required work-around solutions for any proposed development. Also, there was the problem of obtaining clear title to property. The Air Force has done a phenomenal job of cleanup.

2. Are you aware of any community concerns over the remedial actions in the Norton AFB CBA OU? If so, please provide details.

   There were some, such as allegations of radiation, which all turned out to be untrue.

3. Are you aware of any incidents of vandalism and trespassing, or emergency response by local authorities at the Norton AFB CBA OU? If so, please provide details.

   Issues of vandalism to the CBA are unknown. However, there has been vandalism at the base.

4. Do you feel well informed about the cleanup activities and progress at the Norton AFB CBA OU?

   Yes. Mr. Mook and his team have done an outstanding job, through public meetings and newsletters, to keep the public informed. Also, we have worked with the Air Force to solve issues regarding the proposed development.

Individual Contacted: James Gourley	
Title: Consultant	**Organization:** Inland Valley Development Agency
5. How would you characterize the performance of the remedial action(s) implemented at this location (i.e., successful, failed, or other)? Very successful.	
6. What were the primary difficulties in implementing remedial actions here? The real difficulty appeared during reuse. Because the land was not cleared for transfer, development was hindered. This is a huge deterrent in interesting developers to develop the property.	
7. What are your recommendations for completing the groundwater plume cleanup, and how would you establish criteria to demonstrate completion? It is clean. Clear lines of responsibility for the lead and regulatory agencies for cleanup would help resolve reuse issues.	
8. Has anything changed with the status of the cleanup of deep soils at Buildings 658 and 763 during the past five years? No.	
9. Has anything changed with the status of the clean-up of shallow soils at Buildings 673 and 763 during the past five years? No.	
10. Has anything changed with the status of the clean-up of shallow soils at Site 9 (Building 763) during the past five years? No.	

RECORD OF CONVERSATION

Site Name: Norton AFB NPL Site		**EPA ID No.:** CA4570024345	
Subject: Central Base Area OU		**Time:** 1400	**Date:** 5/16/05
Type: [X] Telephone [ ] Visit [ ] Other **Location of Visit:** Not applicable		[ ] Incoming	[X] Outgoing
Contact Made By: Derrick Coleman, Linda Spitzer			
Title: Senior Professionals	**Organization:** Earth Tech, Inc.		
Individual Contacted: John Magness			
Title: Senior Vice President	**Organization:** Hillwood		
Telephone No: 909-382-2154 **Fax No:** 909-382-0073 **E-Mail Add:** john.magness@hillwood.com	**Street Address:** 294 South Leland Norton Way **City, State, Zip:** San Bernardino, CA 92408		

Summary of Conversation

1. What effect have remedial actions had on the surrounding community?

   I think the cleanup has gained the confidence of the surrounding community, in terms of the industrial property owners for sure. I understand that the groundwater and the presence of different elements has been improved and that the remediation efforts have been a success.

2. Are you aware of any community concerns over the remedial actions in the Norton AFB CBA OU? If so, please provide details.

   I think that the Air Force and consultants have done a good job in keeping the public briefed at the different community outreach meetings, and I think the level of concern has dropped dramatically, probably coinciding with the drop in the level of contamination. So I think the pump-and-treat units have worked well. And you see virtually nothing about it in the media, which is generally a good gage of the community's satisfaction or dissatisfaction.

3. Are you aware of any incidents of vandalism and trespassing, or emergency response by local authorities at the Norton AFB CBA OU? If so, please provide details.

   No. Far less crime occurs here than in other parts of the city, with the exception of occasional graffiti

4. Do you feel well informed about the cleanup activities and progress at the Norton AFB CBA OU?

   Yes.

Individual Contacted: John Magness	
Title: Senior Vice President	**Organization:** Hillwood
5. How would you characterize the performance of the remedial action(s) implemented at this location (i.e., successful, failed, or other)? I think it has been very successful.	
6. What were the primary difficulties in implementing remedial actions here? I wasn't here when the remedial steps were put in place, but I can only speculate that pump-and-treat and other methods were proven. I think it has taken a lot to gain the public's trust on that but I think it has been well worth the wait.	
7. What are your recommendations for completing the groundwater plume cleanup, and how would you establish criteria to demonstrate completion? I would think that it would be beneficial especially to the people that are investing more money in the community to have a closeout of the system and to show that (1) it is not needed any more or (2) it is going to continue to be monitored even after the system is shut down (if and when it is shut down). So, I think continued community interaction is going to be important to keep them appraised of what is going on.	
8. Has anything changed with the status of the cleanup of deep soils at Buildings 658 and 763 during the past five years? I have no knowledge.	
9. Has anything changed with the status of the clean-up of shallow soils at Buildings 673 and 763 during the past five years? I don't think they have been a problem. I think they have been cleaned up to satisfactory levels. I have no knowledge of change in the last 5 years.	
10. Has anything changed with the status of the clean-up of shallow soils at Site 9 (Building 763) during the past five years? I have no knowledge. You guys have done a good job.	

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX C

REGULATORY AGENCY REVIEW LETTER

THIS PAGE INTENTIONALLY LEFT BLANK

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

September 20, 2005

Mr. Philip Mook
BRAC Environmental Coordinator
AFRPA/DD Norton
3411 Olson Street
McClellan, CA 95652

Re: **EPA Concurrence with Former Norton AFB Five-Year Review**

Dear Mr. Mook:

EPA has reviewed the draft former Norton AFB Five-Year Review (FYR) report dated August 2005. The report provides the results of the second FYR for remedial actions taken pursuant to the Central Base Area Operable Unit (OU) ROD signed in November 1993. The CBA OU comprises of Site 9 and three other components: (1) TCE groundwater plume, (2) deep soil contamination in areas of MW-90 and Building 673, and (3) shallow soil at Buildings 658 and 673. The first FYR concluded that remedial actions implemented at Site 9, and the CBA OU components (2) and (3), achieved cleanup levels to allow for unrestricted use. EPA concurred with that assessment, and made no further recommendations or requests for information with the first FYR.

This second FYR is focused on the CBA OU groundwater plume component and concludes the remedial actions taken are protective of human health and the environment. The report also provides a summary status of all sites, including those in the Basewide OU.

EPA's comments are provided in the attachment to this letter. While we concur with the FYR protectiveness determination and the overall success of the CBA OU treatment system, the report needs some modifications pertaining to its accuracy, completeness and scope of review. EPA appreciates the cooperation of the Air Force and support staff in effectively remediating the TCE groundwater plume. EPA will provide a separate letter concurring on the decision to abandon the CBA pump and treat system.

Please call James Chang of my staff at extension (415) 972-3193 if you have any questions regarding the FYR comments.

Sincerely,

Kathleen Johnson, Chief
Federal Facility and Site Cleanup Branch
Superfund Division

Attachment: Five Year Review Specific Comments

cc: Stephen Niou
Department of Toxic Substances Control
Office of Military Facilities
5796 Corporate Avenue
Cypress, CA 90630

John Broderick
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3339

Former Norton AFB Five Year Review Comments

General Comments

1. While EPA concurs with Air Force's protectiveness determination, the document's scope needs to be somewhat modified. The last paragraph of the Introduction Summary on page one suggests that the FYR is only focused on those sites where a remedy has been selected (e.g., OU-1 and Site 19). This is not consistent with EPA guidance regarding FYR reviews which directs that the status of all sites are examined even where only some of the sites were the subject of the ROD which triggers the FYR review requirement. The following suggested language better describes the proper scope of the document and should be inserted accordingly:

"This 5-year review is triggered by the completion of the first 5- year review in 1999; however, the scope of the review is not limited to the sites within OU-1. This 5-year review examines all IRP sites (and AOCs) within the installation including those which are included within the Basewide ROD currently under review. No protectiveness determination is made regarding those sites where a response action has not been taken, but all sites where a removal or remedial action has been taken will be assessed. For some sites, a determination can be made that the response is protective in the short term and long tern protectiveness will be provided by Institutional Controls to be selected and implemented."

To accomplish the above objective, the document needs to provide a brief description of the five sites where residual contamination will require ICs in the Basewide ROD. If Site 19 is one of those, then there are only four sites to address.

2. EPA hopes Norton AFB can achieve Construction Complete status and delisting in the near future. To support this by the FYR, the AF should briefly describe any remaining minute plume(s) above MCLs and cite the respective contamination levels as wells at those locations may have been destroyed. Include in the narrative the two planned replacement wells and their purpose, and also cite that there was joint agency concurrence for the abandoned and replacement wells.

Specific Comments

1. On the front of FYR title page, suggest adding the word "Second" before "Five-Year Review Report" for ease of report sequence identification.

2. Section 1/Introduction, last paragraph - Clarify that Site 19's IROD remedy will be finalized in the Basewide ROD as the current narrative suggests that, but does not clearly state so.

3. The following pertains to the Executive Summary:
   a. The summary states the last FYR concluded that cleanup levels had been attained for Site 9 and two components of the CBA OU. We suggest an additional statement to show the regulatory agencies concurred with this.
   b. In fourth paragraph on page xiii, delete the sentence; "Therefore, protectiveness evaluations in this 5-year review are not required" and replace with following protectiveness statement from FYR guidance because the base does not have EPA's construction complete status: "The remedy at OU1 is expected to be protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risks are being controlled."

4. The following fields are keyed to the FYR Summary Form on page xix require revisions:
   a. NPL status - mark "Final" vice "Other."
   b. Remediation Status - mark "Operating" vice "Complete" as basis is on lack of construction complete status.
   c. Multiple OUs? - mark "yes" vice "no" because the report includes OU-1, Site 19's IROD, and summary of all OU-2 sites.
   d. Construction Complete Date - insert "NA" and delete "December 1994" as the entry date is determined by completion of the preliminary closeout report.
   e. Type of review - mark "Post-SARA" vice "NPL-Removal only."
   f. Triggering action date - insert "10/27/1999" as it's based on EPA's concurrence letter date.
   g. Due date - provide very brief explanation why FYR is late according to date shown.

5. The second page of the FYR Summary Form is missing and it should be completed. The following missing information is requested: Issues, Recommendations and Follow-up Actions, Protectiveness Statement(s), and Other Comments. Use the following FYR guidance language for the protectiveness statement entry with respective OUs:

OU-1: Use same statement shown in comment #3b above.

OU-2 (for IC concerns): "The remedy at the site currently protects human health and the environment because exposure pathways that could result in unacceptable risks are being controlled. However, in order for the remedy to be protective in the long term, institutional controls for the site must be implemented to ensure long-term protectiveness."

6. Revise Figure 3-1 by removing wells already abandoned and add in the locations for the two future replacement wells.

7. Section 4.1.4/Progress Since Last Five-Year Review - include the protectiveness statement from the last FYR and specify that it is from the first FYR.

8. Section 4.2.3/Systems O&M - Include a narrative for Site 19's cap maintenance and ICs.

9. Section 5.1/CBA OU - Replace the report's existing protectiveness statement with following FYR guidance language: "The remedy at OU1 is expected to be protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risks are being controlled." See comment #3b above for same rationale.

10. Table 3.3/Summary of site Activities & Conclusions in CBA OU - The Proposed Remedy discussion for Component 3 states that soils were remediated to concentrations less than 5 micrograms per liter (ug/L). Please clarify the units as there appears to be a typo.

11. Section 4.1/CBA OU - The reference to "MCL of 5 mg/L" appears to be a typo, please clarify the contaminant and units.

12. Table 2-1/General Chronology - Add in Site 19's Interim ROD finalized in July 1997 as this was a significant milestone.

13. Section 5.1.2/Question B, Changes in Standards, Page 42 - Add following text between the two existing paragraphs:

> "It is important to note that in 2001, EPA released a draft toxicity evaluation for TCE following the current cancer guidelines and incorporating current data and physiological/biochemical understanding. This review concluded TCE was "highly likely to produce cancer in humans". With this determination, a range of cancer slope factors were developed some of which would result in more stringent cleanup levels than the current MCL. This toxicity evaluation is under review by several external scientific panels. This issue will need to be updated in subsequent 5 year reviews."

14. Section 5.2.2/, Question B, Changes in standards, Page 43. Delete entire existing paragraph and replace with the following text:

> "The toxicity values and carcinogenicity assessment for PCBs was revised in 1997 as part of USEPA's IRIS reassessment program. The reassessment resulted in changes to the health-based screening levels for assessing potential health impacts of PCBs in soils. The new Preliminary Remediation Goals (PRG) for PCBs is 0.22 mg/kg. These changes for the chemicals at the site do not affect the protectiveness of the remedy."

File: 030NAFB-2005FYR

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX D

COMMENT/RESPONSE MATRIX

THIS PAGE INTENTIONALLY LEFT BLANK

Document Title: Draft Five-Year Review Report for Former Norton Air Force Base
Document Date: August 2005
Document Author: Earth Tech, Inc., Colton California
Comments By: U.S. EPA, Region 9
Responses By: Derrick Coleman, Earth Tech, Inc.

Comment No.	Section	Comment	Response	Action
1.	General	While EPA concurs with Air Force's protectiveness determination, the document's scope needs to be somewhat modified. The last paragraph of the Introduction Summary on page one suggests that the FYR is only focused on those sites where a remedy has been selected (e.g., OU-1 and Site 19). This is not consistent with EPA guidance regarding FYR reviews which directs that the status of all sites are examined even where only some of the sites were the subject of the ROD which triggers the FYR review requirement. The following suggested language better describes the proper scope of the document and should be inserted accordingly: "This 5-year review is triggered by the completion of the first 5- year review in 1999; however, the scope of the review is not limited to the sites within OU-1. This 5-year review examines all IRP sites (and AOCs) within the installation including those which are included within the Basewide ROD currently under review. No protectiveness determination is made regarding those sites where a response action has not been taken, but all sites where a removal or remedial action has been taken will be assessed. For some sites, a determination can be made that the response is protective in the short term and long tern protectiveness will be provided by Institutional Controls to be selected and implemented." To accomplish the above objective, the document needs to provide a brief description of the five sites where residual contamination will require ICs in the Basewide ROD. If Site 19 is one of those, then there are only four sites to address.	The language recommended in this comment was included in the Introduction (Section 1.0) of the FYR, except that "OU-1" now reads "CBA OU." The specific discussion of proposed remedy for each of the four additional sites where ICs will be used (Site 2, Site 5, AOC 4, and the Small Arms Range), were taken from Table 3-4 and put in the text of Section 3.10. This emphasizes the use of ICs in the Basewide OU.	Text revised.

Norton AR # 4235 Page 129 of 135

Comment No.	Section	Comment	Response	Action
2.	General	EPA hopes Norton AFB can achieve Construction Complete status and delisting in the near future. To support this by the FYR, the AF should briefly describe any remaining minute plume(s) above MCLs and cite the respective contamination levels, as wells at those locations may have been destroyed. Include in the narrative the two planned replacement wells and their purpose, and also cite that there was joint agency concurrence for the abandoned and replacement wells.	The discussion in Section 4.1.4 already described which wells had TCE concentrations above MCL values and provided maps of the plume(s) through April 2004 (the latest published data). Additional discussion has been added to provide more recent data, with a plume map. Also, a table was added to identify wells that have been destroyed and the new wells installed to provide sampling coverage for the destroyed wells.	Text revised.
3.	Title page	On the front of FYR title page, suggest adding the word "Second" before "Five-Year Review Report" for ease of report sequence identification.	The document title was changed as recommended.	Title revised.
4.	Executive Summary	a. The summary states the last FYR concluded that cleanup levels had been attained for Site 9 and two components of the CBA OU. We suggest an additional statement to show the regulatory agencies concurred with this. b. In fourth paragraph on page xiii, delete the sentence; "Therefore, protectiveness evaluations in this 5-year review are not required" and replace with following protectiveness statement from FYR guidance because the base does not have EPA's construction complete status: "The remedy at OU1 is expected to be protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risks are being controlled."	Combined the changes recommended in parts a and b of this comment; it now reads as follows (in the text on page xiii): "The U.S. Environmental Protection Agency (EPA), the State of California's Department of Toxic Substances Control (DTSC), and the Santa Ana Regional Water Quality Control Board (RWQCB Region 8) all concur with this assessment. The remedy for the CBA OU is expected to be protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risks are being controlled."	Text revised.
5.	FYR Summary Form	a. NPL status - mark "Final" vice "Other." b. Remediation Status - mark "Operating" vice "Complete" as basis is on lack of construction complete status. c. Multiple OUs? - mark "yes" vice "no" because the report includes OU-1, Site 19's IROD, and summary of all OU-2 sites. d. Construction Complete Date - insert "NA" and delete "December 1994" as the entry date is determined by completion of the preliminary closeout report.	Concurred with recommended editorial changes to first page of Summary Form	Form revised.

Norton AR # 4235 Page 130 of 135

Comment No.	Section	Comment	Response	Action
		e. Type of review - mark "Post-SARA" vice "NPL-Removal only." f. Triggering action date - insert "10/27/1999" as it's based on EPA's concurrence letter date. g. Due date - provide very brief explanation why FYR is late according to date shown.		
6.	FYR Summary Form	The second page of the FYR Summary Form is missing and it should be completed. The following missing information is requested: Issues, Recommendations and Follow-up Actions, Protectiveness Statement(s), and Other Comments. Use the following FYR guidance language for the protectiveness statement entry with respective OUs: OU-1: Use same statement shown in comment #3b above. OU-2 (for IC concerns): "The remedy at the site currently protects human health and the environment because exposure pathways that could result in unacceptable risks are being controlled. However, in order for the remedy to be protective in the long term, institutional controls for the site must be implemented to ensure long-term protectiveness."	As recommended, the second page of the Summary Form was added and the text for the protectiveness statements follows the recommendations provided.	Form added.
7.	Section 1 Introduction (last paragraph)	Clarify that Site 19's IROD remedy will be finalized in the Basewide ROD as the current narrative suggests that, but does not clearly state so.	Added to the sentence, and it now reads: "It has been carried under an Interim Record of Decision (ROD) or IROD, which will be finalized in the Basewide ROD."	Text added.
8.	Table 2-1	General Chronology - Add in Site 19's Interim ROD finalized in July 1997 as this was a significant milestone.	The date of the final Site 19 IROD was added to the site chronology (Table 2-1).	Table revised.
9.	Section 3	Revise Figure 3-1 by removing wells already abandoned and add in the locations for the two future replacement wells.	Figure 3-1 was revised to include only functioning wells and planned future wells.	Figure revised.
10.	Table 3-3	Summary of site Activities & Conclusions in CBA OU - The Proposed Remedy discussion for Component 3 states that soils were remediated to concentrations less than 5 micrograms per liter (ug/L). Please clarify the units as there appears to be a typo.	Units were changed to read "5 micrograms per kilogram (ug/kg)"	Table revised.

Norton AR # 4235 Page 131 of 135

Comment No.	Section	Comment	Response	Action
11	Section 4.1	CBA OU - The reference to "MCL of 5 mg/L" appears to be a typo, please clarify the contaminant and units.	The units were changed to read “MCL of 5 ug/L.”	Text revised.
12.	Section 4.1.4	Progress Since Last Five-Year Review - include the protectiveness statement from the last FYR and specify that it is from the first FYR.	New text was added before the first paragraph of Section 4.1.4, which reads as follows: “In the first Five-Year Review for the CBA OU the protectiveness statement was provided by Thomas J. Bartol, Base Environmental Coordinator (AFBCA, Norton Operating Location). His statement read as follows: ‘I certify that the soil remedies have been constructed to eliminate the direct soil contact risk for the sites addressed as part of the CBA OU. The groundwater P&T remedies have been constructed and are working as designed and have substantially reduced the threat to human health and the environment originally posed by the contaminants prior to implementation of the remedies. The CBA P&T remedy has met its objective of removing TCE from the location of the plume with the highest concentrations to levels that address the ROD standards. The SVE remedies have been constructed and completed to substantially reduce the soils concentrations of TCE and cis-1,2-DCE and resulting contaminant concentrations in the aquifer, particularly at the Building 673 source from location where the plume originated. The SVE remedy has not been totally effective in reducing TCE concentrations in the aquifer to below ROD standards and continued monitoring of groundwater at the source locations is warranted. The ROD standards have not been met for the aquifer requiring continuation of portions of the CBA OU remedies, particularly the WSCP. The WSCP, which addresses domestic water supplies and the ongoing groundwater-sampling program, will be continued in order to ensure that the protectiveness of the remedies remains.’"	Text revised.

Norton AR # 4235 Page 132 of 135

Comment No.	Section	Comment	Response	Action
13.	Section 4.2.3	Systems O&M - Include a narrative for Site 19's cap maintenance and ICs.	The text in section 4.2.3 was replaced by the following: "The remedy primarily selected for PCB contamination at Site 19 is the use of ICs to insure that the current concrete cover at the site (in the form of runway apron) is kept in place for the long term. In this case the ICs that are in place are enforced by a Federal Aviation Administration (FAA) covenant that will only allow industrial, commercial, or airport support uses of the land. In its current capacity, the concrete apron serves as a parking and access way for aircraft going to and from the adjacent maintenance hangar. To remain a viable travel route or parking area for aircraft, the concrete will require periodic maintenance from the airport authority (SBIAA). In addition, it will remain accessible for periodic inspections to verify that the concrete remains intact and in place, and continues to provide capping protection from the underlying soil."	Text revised.
14.	Section 5.1	CBA OU - Replace the report's existing protectiveness statement with following FYR guidance language: "The remedy at OU1 is expected to be protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risks are being controlled." See comment #3b above for same rationale.	The text between the Section 5.1 title and the Subsection 5.1.1 title was replaced with the language recommended in the comment, except that "OU-1" reads as "the CBA OU."	Text revised.
15.	Section 5.1.2	Question B, Changes in Standards, Page 42 - Add following text between the two existing paragraphs: "It is important to note that in 2001, EPA released a draft toxicity evaluation for TCE following the current cancer guidelines and incorporating current data and physiological/biochemical understanding. This review concluded TCE was "highly likely to produce cancer in humans". With this determination, a range of cancer slope factors were developed some of which would result in more stringent cleanup levels than the current MCL. This toxicity evaluation is under review by several external scientific panels. This issue will need to be updated in subsequent 5 year reviews."	The suggested text was not added. The current FYR text is correct. Question B, Changes in Standards, will be asked in subsequent FYRs, and answered correctly for its corresponding review period.	No change.

Norton AR # 4235 Page 133 of 135

Comment No.	Section	Comment	Response	Action
16.	Section 5.2.2	Question B, Changes in standards, Page 43. Delete entire existing paragraph and replace with the following text: "The toxicity values and carcinogenicity assessment for PCBs was revised in 1997 as part of USEPA's IRIS reassessment program. The reassessment resulted in changes to the health-based screening levels for assessing potential health impacts of PCBs in soils. The new Preliminary Remediation Goals (PRG) for PCBs is 0.22 mg/kg. These changes for the chemicals at the site do not affect the protectiveness of the remedy."	Text was changed as recommended.	Text revised.

Norton AR # 4235 Page 134 of 135

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE

APPENDIX D
ENVIRONMENTAL DATABASE INFORMATION

Westgate Kohls
SEC of S Lena Road & Tennis CT Ln
San Bernardino, CA 92408

Inquiry Number: 4746163.2s
October 06, 2016

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	128
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-6
Physical Setting Source Map	A-13
Physical Setting Source Map Findings	A-15
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2016 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR).
The results of this search follow:

TARGET PROPERTY ADDRESS

WESTGATE KOHLS
SEC OF S LENA ROAD & TENNIS CT LN
SAN BERNARDINO, CA 92408
Elevation: 1040 ft.
EDR Inquiry Number: 4746163.2s

TARGET PROPERTY SEARCH RESULTS

STANDARD ENVIRONMENTAL RECORDS / **ADDITIONAL ENVIRONMENTAL RECORDS**

Site	Map ID Direction Distance Distance ft. Elevation ft.

The target property was not listed in any of the databases searched by EDR.

SURROUNDING SITES SEARCH RESULTS

STANDARD ENVIRONMENTAL RECORDS

Site	Map ID / Direction / Distance / Distance ft. / Elevation ft.	NPL	Proposed NPL	NPL LIENS	Delisted NPL	FEDERAL FACILITY	SEMS	SEMS-ARCHIVE	CORRACTS	RCRA-TSDF	RCRA-LQG	RCRA-SQG	RCRA-CESQG	LUCIS	US ENG CONTROLS	US INST CONTROL	ERNS	RESPONSE	ENVIROSTOR	SWF/LF	LUST	INDIAN LUST	SLIC	FEMA UST	UST	AST	INDIAN UST	VCP	INDIAN VCP	BROWNFIELDS
NORTON AIR FORCE BASE (CLOSED) , CA CUSA143166	Region < 1/8 1 ft.																													
NORTON AIR FORCE BASE (LNDFLL #2) I-10/US 395 FORMER NORTON AFB SAN BERNARDINO, CA 92408 1000417274	Region < 1/8 1 ft.	X					X		X	X		X			X	X														
EOD FACILITY SAN BERNARDINO, CA 1018154582	1 < 1/8 1 ft. 1040 ft. Higher																													

ADDITIONAL ENVIRONMENTAL RECORDS

Site	Map ID	US BROWNFIELDS	WMUDS/SWAT	SWRCY	HAULERS	INDIAN ODI	DEBRIS REGION 9	ODI	US HIST CDL	HIST Cal-Sites	SCH	CDL	Toxic Pits	US CDL	SWEEPS UST	HIST UST	CA FID UST	LIENS	LIENS 2	DEED	HMIRS	CHMIRS	LDS	MCS	SPILLS 90	RCRA NonGen / NLR	FUDS
NORTON AIR FORCE BASE (CLOSED) CUSA143166	Region																										
NORTON AIR FORCE BASE (LNDFLL #2) 1000417274	Region																										
EOD FACILITY 1018154582	1																										

Site	Map ID	DOD	SCRD DRYCLEANERS	US FIN ASSUR	EPA WATCH LIST	2020 COR ACTION	TSCA	TRIS	SSTS	ROD	RMP	RAATS	PRP	PADS	ICIS	FTTS	MLTS	COAL ASH DOE	COAL ASH EPA	PCB TRANSFORMER	RADINFO	HIST FTTS	DOT OPS	CONSENT	INDIAN RESERV	FUSRAP
NORTON AIR FORCE BASE (CLOSED) CUSA143166	Region	X																								
NORTON AIR FORCE BASE (LNDFLL #2) 1000417274	Region									X				X												
EOD FACILITY 1018154582	1																									

Site	Map ID	UMTRA	LEAD SMELTERS	US AIRS	US MINES	FINDS	UXO	DOCKET HWC	CA BOND EXP. PLAN	Cortese	CUPA Listings	DRYCLEANERS	EMI	ENF	Financial Assurance	HAZNET	HIST CORTESE	HWP	HWT	MINES	MWMP
NORTON AIR FORCE BASE (CLOSED) CUSA143166	Region																				
NORTON AIR FORCE BASE (LNDFLL #2) 1000417274	Region																				
EOD FACILITY 1018154582	1						X														

EXECUTIVE SUMMARY

TARGET PROPERTY ADDRESS

WESTGATE KOHLS
SEC OF S LENA ROAD & TENNIS CT LN
SAN BERNARDINO, CA 92408
Elevation: 1040 ft.
EDR Inquiry Number: 4746163.2s

SURROUNDING PROPERTY SEARCH RESULTS

STANDARD ENVIRONMENTAL RECORDS

Site	Map ID / Direction / Distance / Distance ft. / Elevation ft.	NPL	Proposed NPL	NPL LIENS	Delisted NPL	FEDERAL FACILITY	SEMS	SEMS-ARCHIVE	CORRACTS	RCRA-TSDF	RCRA-LQG	RCRA-SQG	RCRA-CESQG	LUCIS	US ENG CONTROLS	US INST CONTROL	ERNS	RESPONSE	ENVIROSTOR	SWF/LF	LUST	INDIAN LUST	SLIC	FEMA UST	UST	AST	INDIAN UST	VCP	INDIAN VCP	BROWNFIELDS
BONADIMAN-MCCAIN, INC 280 S LENA RD SAN BERNARDINO, CA 92408 S101619503	A2 NW < 1/8 100 ft. 1035 ft. Lower																				X									
BONADIMAN-MCCAIN INC. 280 S LENA RD SAN BERNARDINO, CA 92408 U001576035	A3 NW < 1/8 100 ft. 1035 ft. Lower																								X					
GENERAL SEATING CO 585 E TENNIS COURT LN SAN BERNARDINO, CA 92408 S101591052	A4 NW < 1/8 322 ft. 1033 ft. Lower																													
KOHL'S DEPARTMENT STORES- DC #855 890 E MILL ST SAN BERNARDINO, CA 92408 S106718502	5 ENE < 1/8 434 ft. 1046 ft. Higher																													
MOBIL #18-ARM 807 SAN BERNARDINO, CA 92408 S104747451	6 SSE < 1/8 463 ft. 1045 ft. Higher																				X									

ADDITIONAL ENVIRONMENTAL RECORDS

Site	US BROWNFIELDS	WMUDS/SWAT	SWRCY	HAULERS	INDIAN ODI	DEBRIS REGION 9	ODI	US HIST CDL	HIST Cal-Sites	SCH	CDL	Toxic Pits	US CDL	SWEEPS UST	HIST UST	CA FID UST	LIENS	LIENS 2	DEED	HMIRS	CHMIRS	LDS	MCS	SPILLS 90	RCRA NonGen / NLR	FUDS	DOD	SCRD DRYCLEANERS	US FIN ASSUR	EPA WATCH LIST	2020 COR ACTION	TSCA	TRIS	SSTS	ROD
BONADIMAN-MCCAIN, INC (A2)														X		X																			
BONADIMAN-MCCAIN INC. (A3)																																			
GENERAL SEATING CO (A4)														X		X																			
KOHL'S DEPARTMENT STORES- DC #855 (5)																																			
MOBIL #18-ARM (6)																																			

Site	RMP	RAATS	PRP	PADS	ICIS	FTTS	MLTS	COAL ASH DOE	COAL ASH EPA	PCB TRANSFORMER	RADINFO	HIST FTTS	DOT OPS	CONSENT	INDIAN RESERV	FUSRAP	UMTRA	LEAD SMELTERS	US AIRS	US MINES	FINDS	UXO	DOCKET HWC	CA BOND EXP. PLAN	Cortese	CUPA Listings	DRYCLEANERS	EMI	ENF	Financial Assurance	HAZNET	HIST CORTESE	HWP	HWT	MINES	MWMP
BONADIMAN-MCCAIN, INC (A2)																												X								
BONADIMAN-MCCAIN INC. (A3)																																				
GENERAL SEATING CO (A4)																																				
KOHL'S DEPARTMENT STORES- DC #855 (5)																																				
MOBIL #18-ARM (6)																																X				

EXECUTIVE SUMMARY

TARGET PROPERTY ADDRESS

WESTGATE KOHLS
SEC OF S LENA ROAD & TENNIS CT LN
SAN BERNARDINO, CA 92408
Elevation: 1040 ft.
EDR Inquiry Number: 4746163.2s

SURROUNDING PROPERTY SEARCH RESULTS

Site	Map ID	Direction	Distance	Distance ft.	Elevation ft.
715 E MILL ST SAN BERNARDINO, CA 92408 1015613199	B7	South	< 1/8	465 ft.	1039 ft. Lower
H&R SMOG CHECK & AUTO 715 E MILL ST SAN BERNARDINO, CA 92408 S104252177	B8	South	< 1/8	465 ft.	1039 ft. Lower
HERTZ PENSKE 363 S DOOLITTLE DR SAN BERNARDINO, CA 92408 1000423705	C9	WSW	< 1/8	618 ft.	1032 ft. Lower
RYDER TRUCK RENTAL 363 SO DOOLTITTLE DR SAN BERNARDINO, CA 92408 1000211867	C10	WSW	< 1/8	618 ft.	1032 ft. Lower
PEPSI COLA 363 S DOOLITTLE ST SAN BERNARDINO, CA 92410 S101591111	C11	WSW	< 1/8	618 ft.	1032 ft. Lower

Database	B7	B8	C9	C10	C11
STANDARD ENVIRONMENTAL RECORDS					
NPL					
Proposed NPL					
NPL LIENS					
Delisted NPL					
FEDERAL FACILITY					
SEMS					
SEMS-ARCHIVE					
CORRACTS					
RCRA-TSDF					
RCRA-LQG					
RCRA-SQG				X	
RCRA-CESQG					
LUCIS					
US ENG CONTROLS					
US INST CONTROL					
ERNS					
RESPONSE					
ENVIROSTOR					
SWF/LF					
LUST					
INDIAN LUST					
SLIC					
FEMA UST					
UST					
AST					
INDIAN UST					
VCP					
INDIAN VCP					
BROWNFIELDS					
ADDITIONAL ENVIRONMENTAL RECORDS					
US BROWNFIELDS					
WMUDS/SWAT					
SWRCY					
HAULERS					
INDIAN ODI					
DEBRIS REGION 9					
ODI					
US HIST CDL					
HIST Cal-Sites					
SCH					
CDL					
Toxic Pits					
US CDL					
SWEEPS UST					X
HIST UST					
CA FID UST					X
LIENS					
LIENS 2					
DEED					
HMIRS					
CHMIRS					
LDS					
MCS					
SPILLS 90					
RCRA NonGen / NLR			X		
FUDS					
DOD					
SCRD DRYCLEANERS					
US FIN ASSUR					
EPA WATCH LIST					
2020 COR ACTION					
TSCA					
TRIS					
SSTS					
ROD					
RMP					
RAATS					
PRP					
PADS					
ICIS					
FTTS					
MLTS					
COAL ASH DOE					
COAL ASH EPA					
PCB TRANSFORMER					
RADINFO					
HIST FTTS					
DOT OPS					
CONSENT					
INDIAN RESERV					
FUSRAP					
UMTRA					
LEAD SMELTERS					
US AIRS					
US MINES					
FINDS				X	
UXO					
DOCKET HWC					
CA BOND EXP. PLAN					
Cortese					
CUPA Listings					
DRYCLEANERS					
EMI		X			
ENF					
Financial Assurance					
HAZNET				X	
HIST CORTESE					
HWP					
HWT					
MINES					
MWMP					

EXECUTIVE SUMMARY

TARGET PROPERTY ADDRESS

WESTGATE KOHLS
SEC OF S LENA ROAD & TENNIS CT LN
SAN BERNARDINO, CA 92408
Elevation: 1040 ft.
EDR Inquiry Number: 4746163.2s

SURROUNDING PROPERTY SEARCH RESULTS

STANDARD ENVIRONMENTAL RECORDS

Site	Map ID / Direction / Distance / Distance ft. / Elevation ft.	NPL	Proposed NPL	NPL LIENS	Delisted NPL	FEDERAL FACILITY	SEMS	SEMS-ARCHIVE	CORRACTS	RCRA-TSDF	RCRA-LQG	RCRA-SQG	RCRA-CESQG	LUCIS	US ENG CONTROLS	US INST CONTROL	ERNS	RESPONSE	ENVIROSTOR	SWF/LF	LUST	INDIAN LUST	SLIC	FEMA UST	UST	AST	INDIAN UST	VCP	INDIAN VCP	BROWNFIELDS
PEPSI -COLA BOTTLING GROUP/TORR 363 SOUTH DOOLITTLE SAN BERNARDINO, CA 92048 S112987337	C12 WSW < 1/8 618 ft. 1032 ft. Lower																													
HERTZ PENSKE 363 S DOOLITTLE DR SAN BERNARDINO, CA 92408 1000380730	C13 WSW < 1/8 618 ft. 1032 ft. Lower											X																		
THE SALVATION ARMY 363 S DOOLITTLE ST SAN BERNARDINO, CA 92408 S112274129	C14 WSW < 1/8 618 ft. 1032 ft. Lower																													
MILL ST BODY AND FRAME 595 E MILL ST SAN BERNARDINO, CA 92410 S101591236	D15 SW 1/8-1/4 839 ft. 1032 ft. Lower																													
D & T AUTO REPAIR 595 E MILL ST SAN BERNARDINO, CA 92408 S108214006	D16 SW 1/8-1/4 839 ft. 1032 ft. Lower																													

ADDITIONAL ENVIRONMENTAL RECORDS

Site	US BROWNFIELDS	WMUDS/SWAT	SWRCY	HAULERS	INDIAN ODI	DEBRIS REGION 9	ODI	US HIST CDL	HIST Cal-Sites	SCH	CDL	Toxic Pits	US CDL	SWEEPS UST	HIST UST	CA FID UST	LIENS	LIENS 2	DEED	HMIRS	CHMIRS	LDS	MCS	SPILLS 90	RCRA NonGen / NLR	FUDS	DOD	SCRD DRYCLEANERS	US FIN ASSUR	EPA WATCH LIST	2020 COR ACTION	TSCA	TRIS	SSTS
PEPSI -COLA BOTTLING GROUP/TORR (C12)															X																			
HERTZ PENSKE (C13)																																		
THE SALVATION ARMY (C14)																																		
MILL ST BODY AND FRAME (D15)														X		X																		
D & T AUTO REPAIR (D16)																																		

Site	ROD	RMP	RAATS	PRP	PADS	ICIS	FTTS	MLTS	COAL ASH DOE	COAL ASH EPA	PCB TRANSFORMER	RADINFO	HIST FTTS	DOT OPS	CONSENT	INDIAN RESERV	FUSRAP	UMTRA	LEAD SMELTERS	US AIRS	US MINES	FINDS	UXO	DOCKET HWC	CA BOND EXP. PLAN	Cortese	CUPA Listings	DRYCLEANERS	EMI	ENF	Financial Assurance	HAZNET	HIST CORTESE	HWP	HWT	MINES	MWMP
PEPSI -COLA BOTTLING GROUP/TORR (C12)																																X					
HERTZ PENSKE (C13)																						X															
THE SALVATION ARMY (C14)																																					
MILL ST BODY AND FRAME (D15)																																					
D & T AUTO REPAIR (D16)																																					

EXECUTIVE SUMMARY

TARGET PROPERTY ADDRESS

WESTGATE KOHLS
SEC OF S LENA ROAD & TENNIS CT LN
SAN BERNARDINO, CA 92408
Elevation: 1040 ft.
EDR Inquiry Number: 4746163.2s

SURROUNDING PROPERTY SEARCH RESULTS

STANDARD ENVIRONMENTAL RECORDS

Site	Map ID Direction Distance Distance ft. Elevation ft.	NPL	Proposed NPL	NPL LIENS	Delisted NPL	FEDERAL FACILITY	SEMS	SEMS-ARCHIVE	CORRACTS	RCRA-TSDF	RCRA-LQG	RCRA-SQG	RCRA-CESQG	LUCIS	US ENG CONTROLS	US INST CONTROL	ERNS	RESPONSE	ENVIROSTOR	SWF/LF	LUST	INDIAN LUST	SLIC	FEMA UST	UST	AST	INDIAN UST	VCP	INDIAN VCP	BROWNFIELDS
MILL ST BODY/PAINT/FRAME 595 E MILL ST STE A SAN BERNARDINO, CA 92408 S109429102	D17 SW 1/8-1/4 839 ft. 1032 ft. Lower																													
N & N AUTO REPAIR 595 E MILL ST STE B SAN BERNARDINO, CA 92408 S106911458	D18 SW 1/8-1/4 839 ft. 1032 ft. Lower																													
JIMBO'S AUTO WRECKING 527 E MILL ST SAN BERNARDINO, CA 92408 S104577095	D19 SW 1/8-1/4 947 ft. 1031 ft. Lower																													
SAN BERN. CO., FAC MANAGEMENT 200 S LENA RD SAN BERNARDINO, CA 92415 S103986222	E20 North 1/8-1/4 972 ft. 1039 ft. Lower																													
SAN BERNARDINO COUNTY SHERIFF/CORONER 175 S LENA RD SAN BERNARDINO, CA 92415 S102041765	E21 North 1/8-1/4 1001 ft. 1039 ft. Lower																													

ADDITIONAL ENVIRONMENTAL RECORDS

Map ID	US BROWNFIELDS	WMUDS/SWAT	SWRCY	HAULERS	INDIAN ODI	DEBRIS REGION 9	ODI	US HIST CDL	HIST Cal-Sites	SCH	CDL	Toxic Pits	US CDL	SWEEPS UST	HIST UST	CA FID UST	LIENS	LIENS 2	DEED	HMIRS	CHMIRS	LDS	MCS	SPILLS 90	RCRA NonGen / NLR	FUDS	DOD	SCRD DRYCLEANERS	US FIN ASSUR	EPA WATCH LIST	2020 COR ACTION	TSCA	TRIS	SSTS	ROD
D17																																			
D18																																			
D19																																			
E20																																			
E21																																			

Map ID	RMP	RAATS	PRP	PADS	ICIS	FTTS	MLTS	COAL ASH DOE	COAL ASH EPA	PCB TRANSFORMER	RADINFO	HIST FTTS	DOT OPS	CONSENT	INDIAN RESERV	FUSRAP	UMTRA	LEAD SMELTERS	US AIRS	US MINES	FINDS	UXO	DOCKET HWC	CA BOND EXP. PLAN	Cortese	CUPA Listings	DRYCLEANERS	EMI	ENF	Financial Assurance	HAZNET	HIST CORTESE	HWP	HWT	MINES	MWMP
D17																																				
D18																																				
D19																																				
E20																												X								
E21																																				

EXECUTIVE SUMMARY

TARGET PROPERTY ADDRESS

WESTGATE KOHLS
SEC OF S LENA ROAD & TENNIS CT LN
SAN BERNARDINO, CA 92408
Elevation: 1040 ft.
EDR Inquiry Number: 4746163.2s

SURROUNDING PROPERTY SEARCH RESULTS

STANDARD ENVIRONMENTAL RECORDS

Site	Map ID Direction Distance Distance ft. Elevation ft.	NPL	Proposed NPL	NPL LIENS	Delisted NPL	FEDERAL FACILITY	SEMS	SEMS-ARCHIVE	CORRACTS	RCRA-TSDF	RCRA-LQG	RCRA-SQG	RCRA-CESQG	LUCIS	US ENG CONTROLS	US INST CONTROL	ERNS	RESPONSE	ENVIROSTOR	SWF/LF	LUST	INDIAN LUST	SLIC	FEMA UST	UST	AST	INDIAN UST	VCP	INDIAN VCP	BROWNFIELDS
DOWNTOWN AUTO WRECKING 519 E MILL ST SAN BERNARDINO, CA 92408 S102041839	F22 SW 1/8-1/4 1183 ft. 1028 ft. Lower																													
GLYCO ENVIRONMENTAL SERVICES 892 E SANTA FE ST SAN BERNARDINO, CA 92408 S110326724	23 SSE 1/8-1/4 1184 ft. 1052 ft. Higher																													
SCE-SAN BERNARDINO DISTRIBUTION CENTER #1 570 E MILL ST SAN BERNARDINO, CA 92408 S110496939	F24 WSW 1/8-1/4 1185 ft. 1028 ft. Lower																													
COTT BEVERAGES 570 E MILL ST UNIT B SAN BERNARDINO, CA 92408 S109598530	F25 WSW 1/8-1/4 1185 ft. 1028 ft. Lower																													
MEDLINE INDUSTRIES 1089 E MILL ST SAN BERNARDINO, CA 92408 S110168998	26 SE 1/8-1/4 1186 ft. 1052 ft. Higher																													

ADDITIONAL ENVIRONMENTAL RECORDS

Site	Map ID	US BROWNFIELDS	WMUDS/SWAT	SWRCY	HAULERS	INDIAN ODI	DEBRIS REGION 9	ODI	US HIST CDL	HIST Cal-Sites	SCH	CDL	Toxic Pits	US CDL	SWEEPS UST	HIST UST	CA FID UST	LIENS	LIENS 2	DEED	HMIRS	CHMIRS	LDS	MCS	SPILLS 90	RCRA NonGen / NLR	FUDS	DOD	SCRD DRYCLEANERS	US FIN ASSUR	EPA WATCH LIST	2020 COR ACTION	TSCA	TRIS	SSTS	ROD
DOWNTOWN AUTO WRECKING	F22																																			
GLYCO ENVIRONMENTAL SERVICES	23																																			
SCE-SAN BERNARDINO DISTRIBUTION CENTER #1	F24																																			
COTT BEVERAGES	F25																																			
MEDLINE INDUSTRIES	26																																			

Site	Map ID	RMP	RAATS	PRP	PADS	ICIS	FTTS	MLTS	COAL ASH DOE	COAL ASH EPA	PCB TRANSFORMER	RADINFO	HIST FTTS	DOT OPS	CONSENT	INDIAN RESERV	FUSRAP	UMTRA	LEAD SMELTERS	US AIRS	US MINES	FINDS	UXO	DOCKET HWC	CA BOND EXP. PLAN	Cortese	CUPA Listings	DRYCLEANERS	EMI	ENF	Financial Assurance	HAZNET	HIST CORTESE	HWP	HWT	MINES	MWMP
DOWNTOWN AUTO WRECKING	F22																																				
GLYCO ENVIRONMENTAL SERVICES	23																																		X		
SCE-SAN BERNARDINO DISTRIBUTION CENTER #1	F24																																				
COTT BEVERAGES	F25																																				
MEDLINE INDUSTRIES	26																															X					

EXECUTIVE SUMMARY

TARGET PROPERTY ADDRESS

WESTGATE KOHLS
SEC OF S LENA ROAD & TENNIS CT LN
SAN BERNARDINO, CA 92408
Elevation: 1040 ft.
EDR Inquiry Number: 4746163.2s

SURROUNDING PROPERTY SEARCH RESULTS

STANDARD ENVIRONMENTAL RECORDS

Site	Map ID Direction Distance Distance ft. Elevation ft.	NPL	Proposed NPL	NPL LIENS	Delisted NPL	FEDERAL FACILITY	SEMS	SEMS-ARCHIVE	CORRACTS	RCRA-TSDF	RCRA-LQG	RCRA-SQG	RCRA-CESQG	LUCIS	US ENG CONTROLS	US INST CONTROL	ERNS	RESPONSE	ENVIROSTOR	SWF/LF	LUST	INDIAN LUST	SLIC	FEMA UST	UST	AST	INDIAN UST	VCP	INDIAN VCP	BROWNFIELDS
CURRANS RUBBISH DISPOSAL INC 549 SAN JACINTO ST SANTA BARBARA, CA 92408 U001576039	G27 SW 1/8-1/4 1227 ft. 1031 ft. Lower																													
CURRAN RUBBISH DISPOSAL 549 SAN JACINTO ST SAN BERNARDINO, CA 92408 S104758211	G28 SW 1/8-1/4 1227 ft. 1031 ft. Lower																				X									
CURRAN RUBBISH DISPOSAL 549 E SAN JACINTO ST SAN BERNARDINO, CA 92408 S109285058	G29 SW 1/8-1/4 1227 ft. 1031 ft. Lower																				X									
SAN BERNARDINO COUNTY DOHS 777 E RIALTO AVE SAN BERNARDINO, CA 92415 1000104712	H30 North 1/4-1/2 1632 ft. 1048 ft. Higher									X																				
SAN BERNARDINO CO DEPART OF AGRICULTURE 777 E RIALTO AVE SAN BERNARDINO, CA 92415 S118757510	H31 North 1/4-1/2 1632 ft. 1048 ft. Higher																		X											

ADDITIONAL ENVIRONMENTAL RECORDS

Map ID	US BROWNFIELDS	WMUDS/SWAT	SWRCY	HAULERS	INDIAN ODI	DEBRIS REGION 9	ODI	US HIST CDL	HIST Cal-Sites	SCH	CDL	Toxic Pits	US CDL	SWEEPS UST	HIST UST	CA FID UST	LIENS	LIENS 2	DEED	HMIRS	CHMIRS	LDS	MCS	SPILLS 90	RCRA NonGen / NLR	FUDS	DOD	SCRD DRYCLEANERS	US FIN ASSUR	EPA WATCH LIST	2020 COR ACTION	TSCA	TRIS	SSTS	ROD	RMP
G27															X																					
G28																																				
G29																																				
H30																									X											
H31																																				

Map ID	RAATS	PRP	PADS	ICIS	FTTS	MLTS	COAL ASH DOE	COAL ASH EPA	PCB TRANSFORMER	RADINFO	HIST FTTS	DOT OPS	CONSENT	INDIAN RESERV	FUSRAP	UMTRA	LEAD SMELTERS	US AIRS	US MINES	FINDS	UXO	DOCKET HWC	CA BOND EXP. PLAN	Cortese	CUPA Listings	DRYCLEANERS	EMI	ENF	Financial Assurance	HAZNET	HIST CORTESE	HWP	HWT	MINES	MWMP
G27																																			
G28																															X				
G29																																			
H30																				X															
H31																																			

EXECUTIVE SUMMARY

TARGET PROPERTY ADDRESS

WESTGATE KOHLS
SEC OF S LENA ROAD & TENNIS CT LN
SAN BERNARDINO, CA 92408
Elevation: 1040 ft.
EDR Inquiry Number: 4746163.2s

SURROUNDING PROPERTY SEARCH RESULTS

STANDARD ENVIRONMENTAL RECORDS

Site	Map ID / Direction / Distance / Distance ft. / Elevation ft.	NPL	Proposed NPL	NPL LIENS	Delisted NPL	FEDERAL FACILITY	SEMS	SEMS-ARCHIVE	CORRACTS	RCRA-TSDF	RCRA-LQG	RCRA-SQG	RCRA-CESQG	LUCIS	US ENG CONTROLS	US INST CONTROL	ERNS	RESPONSE	ENVIROSTOR	SWF/LF	LUST	INDIAN LUST	SLIC	FEMA UST	UST	AST	INDIAN UST	VCP	INDIAN VCP	BROWNFIELDS
GSA 777 E RIALTO AVE SAN BERNARDINO, CA 92415 U001576243	H32 North 1/4-1/2 1632 ft. 1048 ft. Higher																				X									
GENERAL SERVICES AGENCY 777 RIALTO AVE SAN BERNARDINO, CA 92415 S104758450	H33 North 1/4-1/2 1685 ft. 1049 ft. Higher																				X									
SAN BERNARDINO CO DEPART OF AGRICULTURE 777 E RIALTO AVE SAN BERNARDINO, CA 92415 S101591133	34 NW 1/4-1/2 2063 ft. 1038 ft. Lower																													
NORTH SAN BERNARDINO AREA BUNKER HILL GROUNDWATER BASIN SAN BERNARDINO, CA 92401 S100184135	35 SSW 1/4-1/2 2367 ft. 1034 ft. Lower																	X	X											
LIBERTY GROVES 495 SAN BERNARDINO, CA 92408 S104749441	I36 WSW 1/4-1/2 2548 ft. 1017 ft. Lower																				X									

ADDITIONAL ENVIRONMENTAL RECORDS

Site	US BROWNFIELDS	WMUDS/SWAT	SWRCY	HAULERS	INDIAN ODI	DEBRIS REGION 9	ODI	US HIST CDL	HIST Cal-Sites	SCH	CDL	Toxic Pits	US CDL	SWEEPS UST	HIST UST	CA FID UST	LIENS	LIENS 2	DEED	HMIRS	CHMIRS	LDS	MCS	SPILLS 90	RCRA NonGen / NLR	FUDS	DOD	SCRD DRYCLEANERS	US FIN ASSUR	EPA WATCH LIST	2020 COR ACTION	TSCA	TRIS	SSTS	ROD
GSA (H32)															X																				
GENERAL SERVICES AGENCY (H33)																																			
SAN BERNARDINO CO DEPART OF AGRICULTURE (34)														X		X																			
NORTH SAN BERNARDINO AREA (35)																																			
LIBERTY GROVES (I36)																																			

Site	RMP	RAATS	PRP	PADS	ICIS	FTTS	MLTS	COAL ASH DOE	COAL ASH EPA	PCB TRANSFORMER	RADINFO	HIST FTTS	DOT OPS	CONSENT	INDIAN RESERV	FUSRAP	UMTRA	LEAD SMELTERS	US AIRS	US MINES	FINDS	UXO	DOCKET HWC	CA BOND EXP. PLAN	Cortese	CUPA Listings	DRYCLEANERS	EMI	ENF	Financial Assurance	HAZNET	HIST CORTESE	HWP	HWT	MINES	MWMP
GSA (H32)																																				
GENERAL SERVICES AGENCY (H33)																																X				
SAN BERNARDINO CO DEPART OF AGRICULTURE (34)																																	X			
NORTH SAN BERNARDINO AREA (35)																																				
LIBERTY GROVES (I36)																																X				

EXECUTIVE SUMMARY

TARGET PROPERTY ADDRESS

WESTGATE KOHLS
SEC OF S LENA ROAD & TENNIS CT LN
SAN BERNARDINO, CA 92408
Elevation: 1040 ft.
EDR Inquiry Number: 4746163.2s

SURROUNDING PROPERTY SEARCH RESULTS

STANDARD ENVIRONMENTAL RECORDS

Site	Map ID Direction Distance Distance ft. Elevation ft.	NPL	Proposed NPL	NPL LIENS	Delisted NPL	FEDERAL FACILITY	SEMS	SEMS-ARCHIVE	CORRACTS	RCRA-TSDF	RCRA-LQG	RCRA-SQG	RCRA-CESQG	LUCIS	US ENG CONTROLS	US INST CONTROL	ERNS	RESPONSE	ENVIROSTOR	SWF/LF	LUST	INDIAN LUST	SLIC	FEMA UST	UST	AST	INDIAN UST	VCP	INDIAN VCP	BROWNFIELDS
ARCO PETROLEUM PROD #82390 495 S WATERMAN AVE SAN BERNARDINO, CA 92408 U001576188	I37 WSW 1/4-1/2 2548 ft. 1017 ft. Lower																				X									
PHIL'S BURGER & DRUMS 835 E. 3RD STREET SAN BERNARDINO, CA 92410 1005440858	38 North 1/4-1/2 2553 ft. 1053 ft. Higher						X																							
SAN BERNARDINO AAF SAN BERNARDINO, CA S107737217	J39 ESE 1/2-1 2943 ft. 1063 ft. Higher																		X											
NORTON AFB - FUDS SAN BERNARDINO, CA S109348603	J40 ESE 1/2-1 2943 ft. 1063 ft. Higher																		X											
BURBANK II ELEMENTARY SCHOOL RIALTO AVENUE/ALLEN STREET SAN BERNARDINO, CA 92408 S107735972	41 WNW 1/2-1 3792 ft. 1026 ft. Lower																		X											

ADDITIONAL ENVIRONMENTAL RECORDS

Site	US BROWNFIELDS	WMUDS/SWAT	SWRCY	HAULERS	INDIAN ODI	DEBRIS REGION 9	ODI	US HIST CDL	HIST Cal-Sites	SCH	CDL	Toxic Pits	US CDL	SWEEPS UST	HIST UST	CA FID UST	LIENS	LIENS 2	DEED	HMIRS	CHMIRS	LDS	MCS	SPILLS 90	RCRA NonGen / NLR	FUDS
ARCO PETROLEUM PROD															X											
PHIL'S BURGER & DRUMS																										
SAN BERNARDINO AAF																										
NORTON AFB - FUDS																										
BURBANK II ELEMENTARY SCHOOL										X																

Site	DOD	SCRD DRYCLEANERS	US FIN ASSUR	EPA WATCH LIST	2020 COR ACTION	TSCA	TRIS	SSTS	ROD	RMP	RAATS	PRP	PADS	ICIS	FTTS	MLTS	COAL ASH DOE	COAL ASH EPA	PCB TRANSFORMER	RADINFO	HIST FTTS	DOT OPS	CONSENT	INDIAN RESERV	FUSRAP
ARCO PETROLEUM PROD																									
PHIL'S BURGER & DRUMS												X													
SAN BERNARDINO AAF																									
NORTON AFB - FUDS																									
BURBANK II ELEMENTARY SCHOOL																									

Site	UMTRA	LEAD SMELTERS	US AIRS	US MINES	FINDS	UXO	DOCKET HWC	CA BOND EXP. PLAN	Cortese	CUPA Listings	DRYCLEANERS	EMI	ENF	Financial Assurance	HAZNET	HIST CORTESE	HWP	HWT	MINES	MWMP
ARCO PETROLEUM PROD																				
PHIL'S BURGER & DRUMS																				
SAN BERNARDINO AAF																				
NORTON AFB - FUDS																				
BURBANK II ELEMENTARY SCHOOL																				

EXECUTIVE SUMMARY

TARGET PROPERTY ADDRESS

WESTGATE KOHLS
SEC OF S LENA ROAD & TENNIS CT LN
SAN BERNARDINO, CA 92408
Elevation: 1040 ft.
EDR Inquiry Number: 4746163.2s

SURROUNDING PROPERTY SEARCH RESULTS

STANDARD ENVIRONMENTAL RECORDS

Site	Map ID Direction Distance Distance ft. Elevation ft.	NPL	Proposed NPL	NPL LIENS	Delisted NPL	FEDERAL FACILITY	SEMS	SEMS-ARCHIVE	CORRACTS	RCRA-TSDF	RCRA-LQG	RCRA-SQG	RCRA-CESQG	LUCIS	US ENG CONTROLS	US INST CONTROL	ERNS	RESPONSE	ENVIROSTOR	SWF/LF	LUST	INDIAN LUST	SLIC	FEMA UST	UST	AST	INDIAN UST	VCP	INDIAN VCP	BROWNFIELDS
TECH PARK HIGH SCHOOL THIRD STREET TIPPECANOE AVENUE SAN BERNARDINO, CA 92410 S105628862	42 NE 1/2-1 3950 ft. 1071 ft. Higher																		X											
TERMINIX 440 S. SIERRA WAY SAN BERNARDINO, CA 92408 U001576076	43 West 1/2-1 4542 ft. 1010 ft. Lower																		X									X		
BURBANK ELEMENTARY 198 WEST MILL STREET SAN BERNARDINO, CA 92408 S107735971	44 West 1/2-1 5158 ft. 1004 ft. Lower																		X											
TROJAN PLATING CO. #1 268 SOUTH MOUNTAIN VIEW SAN BERNARDINO, CA 92408 S102860936	45 West 1/2-1 5227 ft. 1010 ft. Lower																		X											

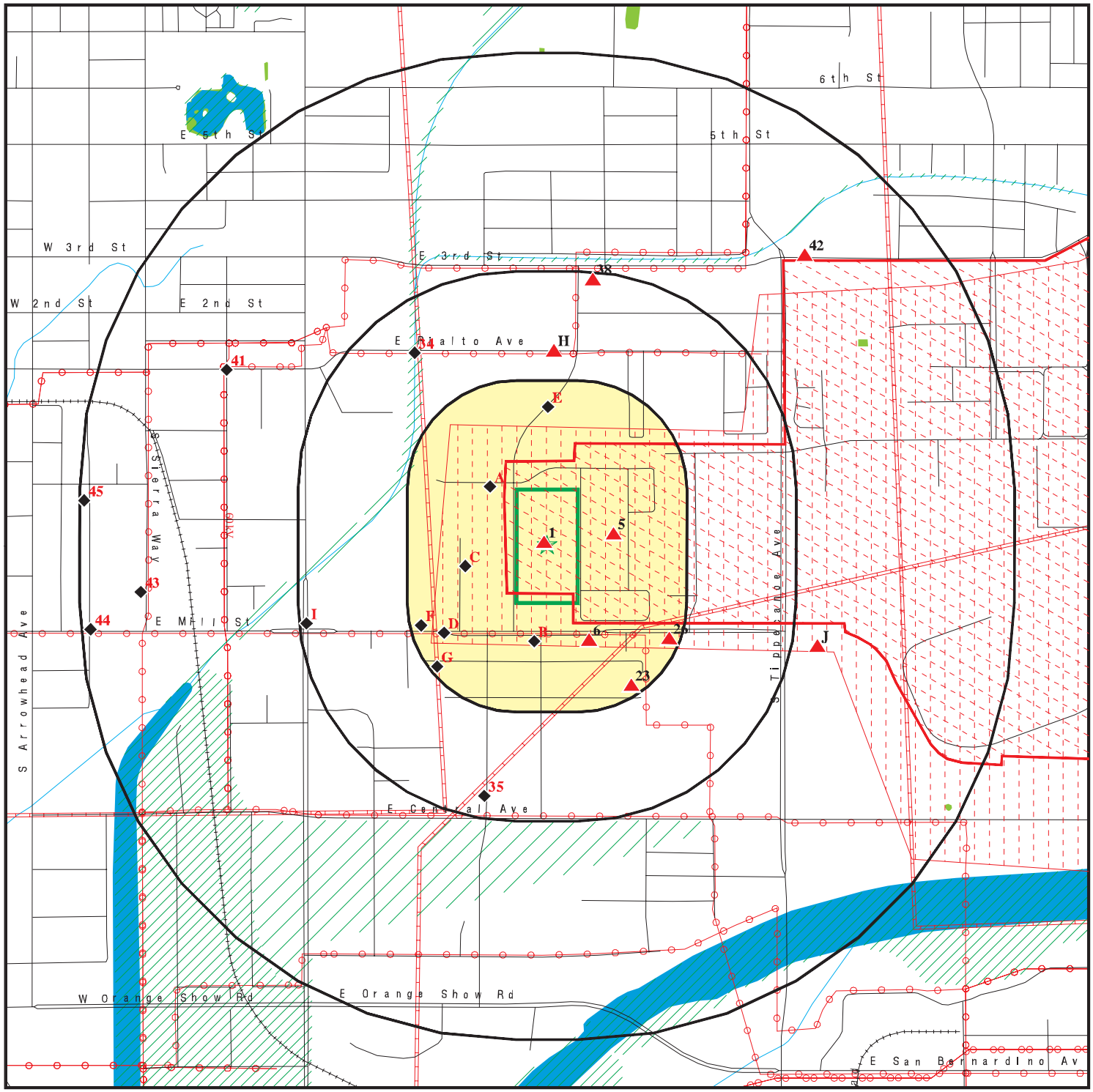
ADDITIONAL ENVIRONMENTAL RECORDS

Map ID	US BROWNFIELDS	WMUDS/SWAT	SWRCY	HAULERS	INDIAN ODI	DEBRIS REGION 9	ODI	US HIST CDL	HIST Cal-Sites	SCH	CDL	Toxic Pits	US CDL	SWEEPS UST	HIST UST	CA FID UST	LIENS	LIENS 2	DEED	HMIRS	CHMIRS	LDS	MCS	SPILLS 90
42										X														
43															X									
44										X														
45																								

Map ID	RCRA NonGen / NLR	FUDS	DOD	SCRD DRYCLEANERS	US FIN ASSUR	EPA WATCH LIST	2020 COR ACTION	TSCA	TRIS	SSTS	ROD	RMP	RAATS	PRP	PADS	ICIS	FTTS	MLTS	COAL ASH DOE	COAL ASH EPA	PCB TRANSFORMER	RADINFO	HIST FTTS	DOT OPS
42																								
43																								
44																								
45																								

Map ID	CONSENT	INDIAN RESERV	FUSRAP	UMTRA	LEAD SMELTERS	US AIRS	US MINES	FINDS	UXO	DOCKET HWC	CA BOND EXP. PLAN	Cortese	CUPA Listings	DRYCLEANERS	EMI	ENF	Financial Assurance	HAZNET	HIST CORTESE	HWP	HWT	MINES	MWMP
42																							
43																							
44																							
45																							

OVERVIEW MAP - 4746163.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

Pipelines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

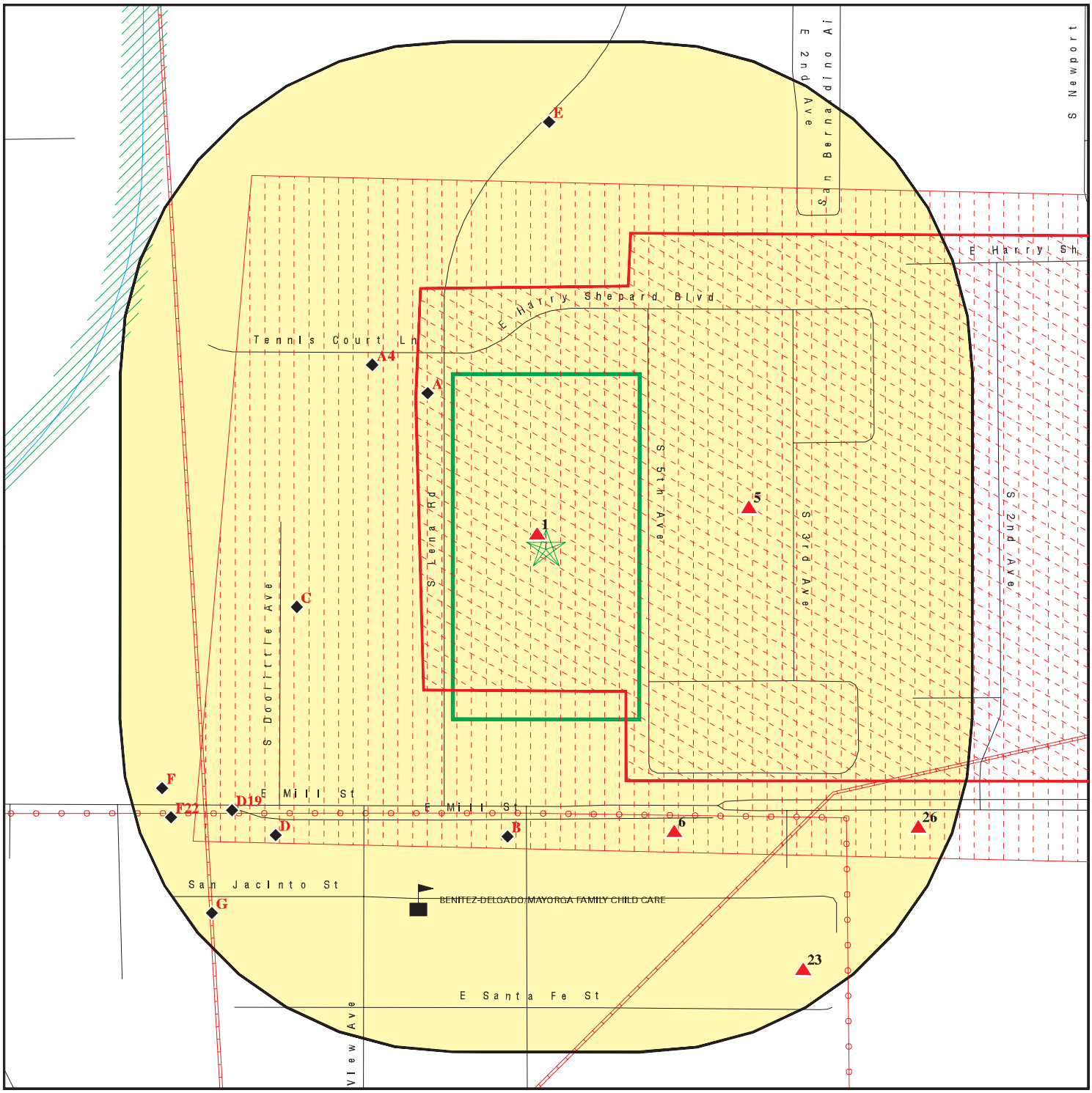
Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Westgate Kohls	CLIENT:	Terracon
ADDRESS:	SEC of S Lena Road & Tennis CT Ln San Bernardino CA 92408	CONTACT:	David Jamison
		INQUIRY #:	4746163.2s
LAT/LONG:	34.094961 / 117.269095	DATE:	October 06, 2016 9:20 am

Copyright © 2016 EDR, Inc. © 2015 TomTom Rel. 2015.

DETAIL MAP - 4746163.2S



0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Westgate Kohls	CLIENT:	Terracon
ADDRESS:	SEC of S Lena Road & Tennis CT Ln San Bernardino CA 92408	CONTACT:	David Jamison
		INQUIRY #:	4746163.2s
LAT/LONG:	34.094961 / 117.269095	DATE:	October 06, 2016 9:21 am

Copyright © 2016 EDR, Inc. © 2015 TomTom Rel. 2015.

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		1	0	0	0	NR	1
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		1	0	1	NR	NR	2
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		1	0	0	0	NR	1
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		1	0	1	NR	NR	2
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		3	0	NR	NR	NR	3
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		1	0	0	NR	NR	1
US INST CONTROL	0.500		1	0	0	NR	NR	1
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	1	0	NR	1
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	2	7	NR	9
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		2	2	4	NR	NR	8

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		1	0	NR	NR	NR	1
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		3	1	NR	NR	NR	4
HIST UST	0.250		1	1	NR	NR	NR	2
CA FID UST	0.250		3	1	NR	NR	NR	4
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		1	0	NR	NR	NR	1
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		1	0	0	0	NR	1
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		1	0	0	0	NR	1
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
UXO	1.000		1	0	0	0	NR	1
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
HIST CORTESE	0.500		1	1	2	NR	NR	4
HWP	1.000		0	0	1	0	NR	1
HWT	0.250		0	1	NR	NR	NR	1

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MINES	TP		NR	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
San Bern. Co. Permit	0.250		4	11	NR	NR	NR	15
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
ICE	1.000		0	0	0	0	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		1	NR	NR	NR	NR	1
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	29	18	12	7	0	66

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

DOD **NORTON AIR FORCE BASE (CLOSED)** **DOD** **CUSA143166**
Region **N/A**
NORTON AIR FORCE BASE (CL (County), CA
< 1/8
1 ft.

DOD:

Feature 1:	Air Force DOD
Feature 2:	Not reported
Feature 3:	Not reported
URL:	Not reported
Name 1:	Norton Air Force Base (Closed)
Name 2:	Not reported
Name 3:	Not reported
State:	CA
DOD Site:	Yes
Tile name:	CASAN_BERNARDINO

NPL **NORTON AIR FORCE BASE (LNDFLL #2)** **NPL** **1000417274**
Region **I-10/US 395 FORMER NORTON AFB** **SEMS** **CA4570024345**
SAN BERNARDINO, CA 92408 **CORRACTS**
< 1/8 **RCRA-TSDF**
1 ft. **RCRA-SQG**
US ENG CONTROLS
US INST CONTROL
ROD
PADS

NPL:

EPA ID:	CA4570024345
Cerclis ID:	902760
EPA Region:	9
Federal:	Y
Final Date:	1987-07-22 00:00:00
Site Score:	39.649999999999999
Latitude:	34.098059999999997
Longitude:	-117.2372

Category Details:

NPL Status:	Currently on the Final NPL
Category Description:	Depth To Aquifer-> 50 And <= 100 Feet
Category Value:	80
NPL Status:	Currently on the Final NPL
Category Description:	Distance To Nearest Population-> 0 And <= 1/4 Mile
Category Value:	10

Site Details:

Site Name:	NORTON AIR FORCE BASE (LNDFLL #2)
Site Status:	Final
Site Zip:	92408
Site City:	SAN BERNARDINO
Site State:	CA
Federal Site:	Yes
Site County:	SAN BERNARDINO
EPA Region:	09
Date Proposed:	10/15/84
Date Deleted:	Not reported
Date Finalized:	07/22/87

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Substance Details:

NPL Status:	Currently on the Final NPL
Substance ID:	Not reported
Substance:	Not reported
CAS #:	Not reported
Pathway:	Not reported
Scoring:	Not reported

NPL Status:	Currently on the Final NPL
Substance ID:	U211
Substance:	CARBON TETRACHLORIDE
CAS #:	56-23-5
Pathway:	GROUND WATER PATHWAY
Scoring:	3

NPL Status:	Currently on the Final NPL
Substance ID:	U228
Substance:	TRICHLOROETHYLENE (TCE)
CAS #:	79-01-6
Pathway:	GROUND WATER PATHWAY
Scoring:	2

Summary Details:

Conditions at proposal October 15, 1984): Norton Air Force Base covers approximately 2,036 acres 58 miles east of Los Angeles near the City of San Bernardino, San Bernardino County, California. It is in a low-lying alluvial plain surroundedon the north and east by the San Bernardino Mountain Range. The base began operations in 1942 and has served as a major overhaul center for jet engines and the general repair of aircraft. Since 1962, the facility has served as a Military Airlift Command Base. In addition, Norton formerly had the responsibility for providing maintenance and logistics for liquid-fuel intercontinental ballistic missiles. Past ha ardous waste management practices may have contributed to existingcontamination problems throughout the base. The practices include burial of drums and other unspecified materials; disposal of waste oils, solvents, and paint residues into landfills, unlined pits, ponds, and drying beds; storage in leaking underground tanks; and spills of AVGAS, oils, solvents, PCBs, and acidic plating solutions. Industrial solvents have been used extensively on the base. Unknown quantities of spent solvents were disposed of in several base landfills.A well on the base has been contaminated with trichloroethylene TCE). The well water is currently being used in a blended system and is sampled quarterly to ensure that TCE is below the California State action level. The water is used by approximately ll,000 people who live and/or work on the base. Norton Air Force Base is participating in the Installation Restoration Program IRP), established in l978. Under this program, the Department of Defense seeks to identify, investigate, and clean up contamination from ha ardous materials. The Air Force has completed Phase I records search). Phase II remedial investigation) is underway. Status July 22, 1987): In November 1986, the California Regional Water Quality Control Board issued a Cleanup and Abatement Order requiring Norton to clean up one on-base area, the Industrial Waste Water Treatment Plant Sludge Drying Beds. Phase II-Stage 2 of the IRP was completed in December 1986. It focusedon characteri ation of the contamination at 18 on-base areas. More than 22 areas have been identified to date. Additional areas will be studied in Stage 3, scheduled to begin in the fall of 1987. Within the boundaries of this Federal facility, there are areas subject to the Subtitle C

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

corrective action authorities of the Resource Conservation and Recovery Act RCRA). However, no such areas were included in scoring this specific site. Therefore, this Federal facility site isbeing placed on the Federal section of the NPL under the NPL/RCRA policy announced on September 8, 1983 48 FR 40662).

Site Status Details:

NPL Status:	Final
Proposed Date:	10/15/1984
Final Date:	07/22/1987
Deleted Date:	Not reported

Narratives Details:

NPL Name:	NORTON AIR FORCE BASE (LNDFLL #2)
City:	SAN BERNARDINO
State:	CA

SEMS:

Site ID:	902760
EPA ID:	CA4570024345
Federal Facility:	Y
NPL:	Currently on the Final NPL
Non NPL Status:	Not reported

Following information was gathered from the prior CERCLIS update completed in 10/2013:

Site ID:	0902760
EPA ID:	CA4570024345
Facility County:	SAN BERNARDINO
Short Name:	NORTON AIR FORCE BASE (LN
Congressional District:	31
IFMS ID:	0978
SMSA Number:	6780
USGC Hydro Unit:	18070203
Federal Facility:	Federal Facility
DMNSN Number:	2003.00000
Site Orphan Flag:	N
RCRA ID:	Not reported
USGS Quadrangle:	Not reported
Site Init By Prog:	Not reported
NFRAP Flag:	Not reported
Parent ID:	Not reported
RST Code:	Not reported
EPA Region:	09
Classification:	Military Related
Site Settings Code:	SU
NPL Status:	Currently on the Final NPL
DMNSN Unit Code:	ACRE
RBRAC Code:	Not reported
RResp Fed Agency Code:	USAF
Non NPL Status:	Not reported
Non NPL Status Date:	/ /
Site Fips Code:	06071
CC Concurrence Date:	05/16/06
CC Concurrence FY:	2006
Alias EPA ID:	Not reported
Site FUDS Flag:	Not reported

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

CERCLIS Site Contact Name(s):

Contact ID:	9270192.00000
Contact Name:	Nadia Burke
Contact Tel:	(415) 972-3187
Contact Title:	Remedial Project Manager (RPM)
Contact Email:	Not reported
Contact ID:	13003854.00000
Contact Name:	Leslie Ramirez
Contact Tel:	(415) 972-3978
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported
Contact ID:	13003858.00000
Contact Name:	Sharon Murray
Contact Tel:	(415) 972-4250
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported
Contact ID:	13004003.00000
Contact Name:	Carl Brickner
Contact Tel:	Not reported
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported

CERCLIS Site Alias Name(s):

Alias ID:	101
Alias Name:	AREA II LANDFILL
Alias Address:	GOLF COURSE NORTON AFB, CA 92409
Alias ID:	201
Alias Name:	NORTON AIR FORCE BASE (LANDFILL #2)
Alias Address:	Not reported CA
Alias ID:	202
Alias Name:	NORTON AIR FORCE BASE
Alias Address:	I-10-US 395 SAN BERNARDINO, CA 92408
Alias ID:	203
Alias Name:	NORTON AIR FORCE BASE (LNDFLL #2)
Alias Address:	I-10-US 395 SAN BERNARDINO, CA 92409
Alias ID:	9270149
Alias Name:	NORTON USAF BASE
Alias Address:	63ABG/CC NORTON AFB, CA 86023
Alias ID:	201
Alias Comments:	PREVIOUS EPA ID# AZD 981 416 977

Site Description: The Base Closure team has worked closely with the City of Riverside to ensure that controls are in place to protect the public from exposure to contamination. The Air Force constructed a groundwater extraction and treatment remedy in 1994 and is currently operating two pump and treat systems which have treated over 90 million gallons of contaminated groundwater to date. Approximately 325 lbs. of TCE have been removed from the groundwater. Additionally, a soil vapor extraction system is currently operating and 6,247 lbs. of TCE have been removed from the contamination source area. Since

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

1994, the Air Force has excavated approximately 40,000 cubic yards of contaminated soils from various locations on the base which were then treated and disposed of on-site, or transported to an off site disposal facility. The Air Force also closed numerous underground storage tanks and excavate and treated contaminated soil using bioremediation technology in 1996. An investigation of alleged radiological contamination was conducted and results showed that elevated levels of radionuclides in groundwater were caused by naturally occurring uranium. In 1996, the Air Force removed a waste line contaminated with radium paint residue and another industrial waste line. A JP-4 aircraft fuel system which was not contaminated will be salvaged for future use by the airport.In 1980, DOD issued a policy requiring identification of hazardous waste sites. In 1982, Norton issued the Phase I Records Search. In 1985, the site issued the Phase II Problem Confirmation Study. In June 1989, after various investigations, the Air Force signed the Norton AFB Federal Facility Agreement. In November 1990, Norton AFB began the Central Base Area (CBA) OU Groundwater Investigation to define the extent of the plume. In 1991, through a removal action, TCE-contaminated soil was treated onsite. In early 1993, the Air Force issued a draft RI, FS and proposed plan. In June 1992, the Air Force began a treatability test of the ground water pump and treat system. In 1993, Norton AFB issued the Final FS and Plan.The 2,003-acre Norton AFB is located in San Bernardino County, California (40th Congressional District), approximately 65 miles east of Los Angeles. The site is bounded by the Santa Ana River to the south, and other adjacent areas are used for residential, industrial, and agricultural purposes. Operations at the site began in 1942, and the facility served as a major overhaul center for jet engines and the general repair of aircraft. The site formerly had the responsibility of providing maintenance and logistics for liquid-fuel intercontinental ballistic missiles. There are more than 20 areas of contamination on the base including two landfills, six discharge areas, four chemical pits, a fire training area, a fuel spill area, a polychlorinated biphenyl (PCB) spill area, a chemical spill area, two waste storage areas, an underground storage area, and a low-level radioactive waste burial site. Soil contaminants included PCBs, trichloroethylene (TCE), petroleum hydrocarbons, metals such as lead and polycyclic aromatic hydrocarbons. An off-site groundwater plume (TCE) has impacted several municipal drinking water wells. Norton AFB was closed by the Department of Defense in March 1994, based on the legislative requirements in the Base Realignment and Closure Act of 1990. Consistent with the reuse alternatives identified in the Final Environmental Impact Statement, the Base is being redeveloped as an airport with mixed non-aviation, light industrial land use. Norton Air Force Base is located in the city of San Bernardino, San Bernardino County, California, 55 miles east of Los Angeles and 60 miles west of Palm Springs. The main surface water features near the site are City Creek, Warm Creek, the Twin Creek flood control channel, and the Santa Ana River, which flows southwest along the southern base boundary. The aquifer system beneath the site is part of the Bunker Hill hydrologic basin. Drinking water is derived from the middle and lower water-bearing zones. The site is classified as residential and light industrial. Adjacent properties includes area of residences, light and heavy industry, and agriculture. The population of the county is 1,418,380. The site was activated in March 1942 as an engine repair center for Air Force, U. S. Navy, and private industry aircraft. The site became a Military Airlift Command base in 1966. In 1968, the Aerospace Audiovisual Services established its headquarters at the base. The site also provided airlift and sustenance capabilities for air and combat units world-wide. Solvents, specifically TCE, were used in servicing aircraft from 1940s to the early 1980s. Former waste disposal, handling, and discharge practices have resulted in the contamination of soil and the upper water-bearing zone of a drinking water aquifer. The base was officially

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

added to the U.S. EPA National Priorities List (NPL) on July 22, 1987. The U.S. EPA, California Department of Toxic Substances Control (DTSC), and the U.S. Air Force signed an interagency agreement, known as the Norton AFB Federal Facility Agreement (FFA) on June 29, 1989, which governs the conduct of environmental investigation and cleanup activities. The Air Force, U.S. EPA, DTSC, and the Regional Water Quality Control Board (RWQCB) Santa Ana Region comprise the Base Realignment and Closure (BRAC) Cleanup Team (BCT), with the Air Force serving as lead agency. The base has been subdivided into six separate areas for purposes of investigation and description of base activities. Since closure and redevelopment of portions of the base, many streets have been renamed. -The Central Base Area (CBA), which reflects the western one-third of the former base, was the most developed portion of the base and included the majority of offices, warehouses, on-base housing, engineering yards, and aircraft repair facilities. -The former Ballistic Missile Organization (BMO) complex is located south of the CBA and across Mill Street. The former BMO complex has been deeded to the Inland Valley Development Agency and a portion is occupied by the Defense Finance and Accounting Service. -The airfield includes the runways, ramps, aircraft parking, and hangars used for aircraft repair. The airfield covers the eastern two-thirds of the former base. -The Northeast Base Area (NBA) is located north of the airfield and represents the portion of the base with the oldest buildings. The original aircraft hangars and repair facilities are located within the NBA, as well as the former base Landfill No. 2. -The Golf Course Area (GCA) is located south of the airfield and is the current site of the Palm Meadows Golf Course. Prior to construction of the golf course, the GCA was used as a landfill (IRP Site 10), liquid waste disposal (IRP Site 1), a quartermaster's salvage yard, and chemical warfare training area, among other activities. -The former industrial waste treatment plant (IWTP) facility is located south of the GCA and was used for the treatment of liquid wastes generated as part of aircraft maintenance and repainting. Several investigations were conducted from 1982 to date. The 1982 to 1988 investigations resulted in identification of 22 Installation Restoration Program (IRP) sites. During closure of the base, additional records investigations resulted in identification of 73 AOCs. Contamination at the Small Arms Range (SAR) and the pipeline excavation at Building 752 was identified during cleanup actions performed at these sites. OU2: Site Specific Information IRP Site 1 - IRP Site 1 is in the GCA and was the location of former unlined lagoons used from 1950 to 1960 for the disposal of liquid waste generated during aircraft repair. During the 1960s, a portion of the golf course was constructed over the site without removing all industrial waste. The Remedial Investigation (RI) identified soils contaminated with paints, solvents, oil, fuels, and solids that had been washed into the industrial waste system. Chlorobenzene, 1,2-dichlorobenzene (DCB), and 1,4-DCB exceeded industrial PRGs. An Engineering Evaluation/Cost Analysis (EE/CA) identified removal of contaminated soil to a depth of approximately 30 feet below ground surface (bgs), backfilling with clean soil, and restoring the site as a portion of a fairway and green. A total of 20,325 tons of contaminated soil was excavated from an area of approximately 25,000 square feet, to the top of the perched-zone groundwater at a depth of approximately 29 feet bgs. The excavation was located next to a berm that supports the airfield perimeter road. Based on confirmation sampling results the contamination extended beneath the perimeter road. For technical and implementability reasons, the deep and lateral contamination was not removed. The area of affected soil left in place covers approximately 3,800 square feet. IRP Site 1 is part of the active golf course, and the property is currently zoned industrial/commercial by the city of San Bernardino. The projected long-term use of the site is expected to be commercial/industrial-related options for the property. IRP Site 2 - IRP Site 2 is located in the northeast corner of former Norton AFB and is the

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

location of a former base landfill used between 1958 and 1980. Originally, it covered approximately 31 acres and was used for the disposal of general refuse, office waste, industrial waste, and industrial waste treatment plant (IWTP) sludge. Under CERCLA, the presumptive remedy for landfills is to leave waste in place and to provide an appropriate containment system. Under the presumptive remedy guidelines, various cover systems and associated gas control systems were evaluated in an EE/CA for IRP Site 2, and a natural soil cover was selected with an appropriate surface water control system. Because landfill gas (e.g., methane, PCE, trichloroethene [TCE], and vinyl chloride) was present, a landfill gas control system was also required. The cover, surface water control, and gas control systems were described in an Action Memorandum (AM). The design for the landfill has been implemented with consolidation into a smaller footprint and construction of the landfill cover and gas collection/control systems completed in December 1998 and accepted by the BRAC Cleanup Team (BCT) in February 1999. Site 2 is a closed landfill, and the property is currently zoned industrial/commercial by the city of San Bernardino. The projected long-term use of the site is expected to be passive open space. IRP Site 5 - IRP Site 5 served as the training area for fire control and abatement exercises from the late 1950s through the 1970s. Site 5 is in the southern portion of the former base, east of the golf course. Fire training exercises involved floating a layer of oil, fuel, or other combustible material on a layer of water and repeatedly igniting and extinguishing the material. RI results showed the site to contain metals (cadmium, copper, lead, and zinc) and dioxins in near-surface soils (to 10 feet bgs) and fuels (benzene, toluene, ethylbenzene, xylenes [BTEX]), solvents, and PAHs in deeper soils up to 40 feet bgs. The EE/CA and subsequent AM for IRP Site 5 selected soil vapor extraction (SVE) for remediation of fuel contamination, excavation followed by stabilization of the metals/dioxin-contaminated soil, and excavation and disposal of the PAH-contaminated soil. This removal action was completed during 1998 and involved an area of approximately 100,000 square feet. Excavation was performed to a maximum depth of 13 feet bgs, and confirmation samples were taken on the sidewalls and bottom of the excavation. The SAR impact berm adjacent to IRP Site 5 was also removed during the Site 5 removal action. The SVE component of the remedy removed 22,600 pounds of hydrocarbons. The SVE system was operated from January 10, 1996, until July 10, 1997. The effectiveness of the SVE system was assessed through confirmation soil boring samples and vadose zone leaching modeling. The model simulations indicated that the SVE removal adequately addressed the hydrocarbon contamination and was protective of groundwater. The soil excavation was performed in two phases. The first phase consisted of the removal of 21,104 tons of contaminated soil and 4,589 tons of rock and debris. This material was transported to the IRP Site 2 landfill. The lead in the contaminated soil was stabilized using 15 percent (by weight) Portland cement to meet State of California nonhazardous waste criteria. The soil that met nonhazardous criteria was used as foundation material for the landfill cap. The material not meeting the California nonhazardous waste criteria (1,443 tons) met federal nonhazardous waste criteria and was shipped to Browning Ferris Industries (BFI) landfill in La Paz, Arizona, for disposal. The second phase involved excavation of 3,496 tons of contaminated soil, stabilized with 15 percent (by weight) Portland cement, which was shipped to the BFI landfill in Arizona for disposal as an RCRA nonhazardous waste. The excavation area was backfilled with clean soil to the level of the former topographic grade. No groundwater contamination is associated with IRP Site 5. The site is being used for storage of golf course landscape waste prior to off-site disposal, and the property is currently zoned industrial/commercial by the city of San Bernardino. The projected long-term use of the site is expected to be industrial/commercial-related. Small Arms Range - The SAR was located

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

immediately adjacent to IRP Site 5 and historically included an impact berm. The berm was contaminated by lead projectiles as a result of small arms practice, and a removal action was addressed in a work plan. Because the berm was contiguous with Site 5, portions of the berm were removed during the Site 5 removal action. A total of 11,478 tons of material was removed from the SAR, including 210 tons of bullet fragments and rock, classified as RCRA hazardous waste, and disposed at the Laidlaw Environmental Services landfill in Westmoreland, California. Nonhazardous waste, including 128 tons of rock and debris and 9,124 tons of soil, was placed at the IRP Site 2 landfill. The remaining 2,106 tons of soil were stabilized with 15 percent (by weight) Portland cement. This material did not meet California nonhazardous waste criteria and was shipped to the BFI landfill in Arizona for disposal. Confirmation samples were collected, and lead was detected above the residential PRG at one location. Following completion of the soil removal action, much of the remaining portion of the SAR impact berm was pushed into the Site 5 excavation as fill. The soil from the berm was then covered with soil imported from the adjacent riverbed to bring the Site 5 area back to its original grade. The firing line area of the SAR remains as a ground depression and is not being used. Projected long-term plans for the area are industrial/commercial-related use. The firing line area remains as a ground depression and is not being used. Projected long-term use of the site is expected to be commercial/industrial-related options for the property. IRP Site 7 - IRP Site 7 is located in the southeast corner of the former IWTP compound. Although Site 7 is part of this CERCLA ROD, as part of the former IWTP, Site 7 also must be closed as part of the RCRA corrective action termination of the interim status facility (two separate closure processes). The site included 12 concrete-walled, unlined sludge-drying beds, covering approximately 17,280 square feet. The beds were used to dry sludge generated at the IWTP until 1987. During removal of the sludge, it was temporarily stored at the northeast corner of the site. The former waste pile appears to have been located on what is now highly weathered asphalt pavement. Physical removal and disposal of the concrete-walled sludge-drying beds and surface soils were completed in March 2004, and the CERCLA closure report is in review. The site is currently not being used. The property is zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the site is expected to be commercial/industrial-related options for the property. IRP Site 10 - Site 10 is located along the southern base boundary in the eastern portion of the golf course. Landfill No. 1 was used by the Air Force from 1943 to 1958, primarily for disposal of general refuse, which was apparently burned at the site. The 1984 to 1995 investigations, which included sampling for metals, pesticides, PAHs, and PCBs, indicated the presence of metals in ash (primarily chromium and lead) above the residential soil PRGs in shallow soil (0 to 2 feet bgs). Based on the RI data for metals, an RA for Site 10 was evaluated in an EE/CA. Because contamination was not significantly above industrial soil cleanup goals, the Air Force elected to establish a deed restriction for the site. However, the ecological risk assessment (ERA) determined that the contamination was localized, and concentrations of chromium and lead at the hot spots posed a significant risk to plants and animals. The Air Force responded by developing a hot-spot removal plan for Site 10. A removal action was performed at four hot spot locations that resulted in excavation of 340 cubic yards of contaminated soil. Approximately 224 cubic yards of contaminated soil were disposed at the Site 2 landfill, and 116 cubic yards were disposed off site. Physical removal and disposal of dioxin-contaminated soil were completed in 2004, and the closure report is in preparation. The northern portion of the site is used as a golf course fairway, and the property is currently zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the site north of the base boundary is expected to be industrial-related. The

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

southern portion of the site includes habitat for two endangered species, and is bounded by a man-made flood protection levee. The southern portion is off base and is zoned open space with unrestricted public access. IRP Site 17 - IRP Site 17 is located in the southwestern corner of the former IWTP compound. Although Site 17 is part of the CERCLA ROD, as part of the former IWTP, Site 17 is undergoing RCRA closure as part of the corrective action termination of the RCRA interim status facility (two separate processes). The former IWTP treated industrial wastewater from the repair of military aircraft from 1960 to 1993. Most of the IWTP facility was removed in 1995. IRP Site 17 is comprised of two connected brick-lined sumps that the Air Force constructed during the early 1960s for the purpose of burning waste fuels and solvents. The Air Force initiated burning, but in 1961 permission for continued burning was denied by local air quality authorities. Therefore, the sumps were used for waste destruction for a limited time but were used primarily as holding tanks for the IWTP and as an oil/water separator until 1985. The area immediately south of the sumps was also used for storage of solvent and plating wastes contained in 55-gallon drums. Site 17 was subject to a series of site investigations initiated in 1984. Site investigations have identified a zone of fine-grained soils, 25 to 55 feet bgs, that underlie and overlie two zones of coarser-grained soils. An EE/CA prepared for Site 17 presented a detailed analysis of the subsurface conditions at the site. In summary, there are two water-bearing zones below the Site 17 area. The first zone is a perched groundwater layer that is supported by a layer of finer-grained silts and clays extending from approximately 25 to 55 feet bgs. Collectively, the zone of finer-grained soils starting at 25 feet bgs and the perched groundwater supported by the finergrained soils is termed the "perched zone." Below the zone of finer-grained soil material is the second zone, termed the "upper aquifer." The upper aquifer comprises sands and gravels that extend to at least 500 feet below the site. During the early 1980s, the top of the upper aquifer was in contact with the zone of finer-grained soil material at 50 feet bgs. Between 1984 and 1988, the elevation of the upper aquifer dropped 7 to 10 feet, below the soil layer of the perched zone. Between 1988 and 1993, the water elevation decreased another 15 to 25 feet, resulting in several dry monitoring wells. The depth to groundwater in the upper aquifer now ranges from approximately 75 to 90 feet bgs (depending on seasonal fluctuations) in the area of IRP Site 17. The perched-zone groundwater contamination is assumed to have resulted from the former chemical waste storage at Site 17. The source may have been from the drums of waste solvents once stored at Site 17 or leakage from the Site 17 sumps. Due to the sandy nature of the surface soils, the solvent migrated downward to the perched zone, where further downward migration was retarded by the finer-grained soils. The two sumps, which were part of the IWTP, were removed in 2003, and the CERCLA closure report is in preparation. The site is currently not being used. The property is zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the site is expected to be as industrial/commercial-related options for the property. IRP Site 19 - Site 19, located in the CBA to the south of Building 763, was formerly used as a drum storage area and aircraft washing facility. Drums of fuels, oils, electroplating solutions, TCE and trichloroethane (TCA) sludge, and cyanide waste solutions were stored on an unpaved fenced lot. The area south of Building 763 was the general location of the original aircraft washing facility. This facility was removed in 1966, and the area was resurfaced with 20 inches of concrete to become part of the flight line. Site 19 was investigated during the 1984 to 1986 IRP and the 1991 to 1993 RIs. PCBs were detected in excess of residential PRGs, primarily in the upper 6 inches of soil beneath the concrete runway apron. An interim ROD was developed for IRP Site 19 to identify a use restriction documenting the presence of the contamination. This ROD and its decision for IRP Site 19 will supersede the

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

interim ROD. No groundwater contamination is associated with this site. The long-term future land use for Site 19 is to retain the runway apron for use by the San Bernardino International Airport Authority (SBIAA) airfield. AOC 4 - Building 301, located in the NBA near U and 102nd streets, was an equipment and vehicle washing facility. During the 1950s, the building was part of a spray painting facility. At the time of base closure (1994), it was used by civilian auto hobby personnel. AOC 4 consists of the foundation of former Building 301, an adjacent washing slab, and adjacent soil areas. A separator/dosing chamber was removed and its location evaluated as part of the basewide underground storage tank (UST) program. A solids collection pit and two trench drains were identified during the site investigation. The concrete washing slab was heavily stained, particularly near the trench drains. Drums of oil and other materials were stored in sheds along the southern drain line. A 4-foot- by 4-foot-wide area surrounded by a 6-foot-tall chain-link fence is located to the north of the washing slab and may represent the location of a former waste receptacle. The area is capped with a wooden cover, and the material under the cover may be fill. The area of affected soil is approximately 40 feet by 120 feet. No groundwater contamination is associated with this AOC. AOC 4 is on a parcel that was transferred by SBIAA to the San Bernardino County Fire Department under a Federal Aviation Administration (FAA) covenant that allows only industrial, commercial, or aircraft support usage. The Fire Department has refurbished Building 302 for office use and vehicle repair and is using the area west of the building (north of AOC 4) as a household hazardous waste collection point. Remedial alternatives were evaluated in an EE/CA. The Air Force identified ICs as the preferred alternative in the AM. Paved areas south of Building 302 are being used for vehicle and equipment storage. The western half of AOC 4 is covered by grassy weeds, while the eastern half is paved and includes a covered storage area. The Fire Department plans to use the paved area for equipment storage, while there are no plans for use of the grassy area of AOC 4 outside of the fenced storage yard. The property is currently zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the site is expected to be industrial/commercial-related options for the property. AOC 18 - Former Buildings 451 and 452 were located in the CBA, east of Tippecanoe Avenue and north of Harry Sheppard Boulevard. Building 451 was a former garage and gas station in operation from 1942 to the late 1960s or early 1970s; Building 452 was the site of USTs. A 1942 site drawing indicates five 12,000-gallon gasoline USTs, a fueling station, and an oil storage house (Buildings 452, 451, and 450, respectively), although a 1967 site drawing indicates only two 12,000-gallon USTs were present. All structures and USTs have been removed. AOC 18 was investigated during the confirmation study (CS) and expanded source investigation (ESI). The soil contamination covers an area of approximately 600 feet. Prior to the initial redevelopment activities, AOC 18 was covered by an asphalt-paved parking lot that served the adjacent base post office. From January 2000 to 2004, the surface of the AOC was bare earth facilitating aeration (volatilization) of the fuel-related chemicals. The site is now paved with asphalt as part of the Mattel warehouse and distribution center. Remedial alternatives were previously evaluated in an EE/CA. The Air Force identified ICs in the AM as the preferred RA. AOC 18 is on property that was transferred to Inland Valley Development Agency (IVDA). IVDA has demolished all structures in the vicinity of AOC 18 and removed all pavement in preparation for redevelopment. The property is currently zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the site is expected to be industrial/commercial-related options for the property. AOC 33 - Building 747, located in the southeastern corner of the CBA, was one of the primary industrial facilities at Norton AFB. Although AOC 33 is part of this CERCLA ROD, as part of the former Industrial Waste Line

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

(IWL), it is also part of the RCRA corrective action termination of the interim status facility (two separate closure processes). The building was constructed in 1942 and renovated in 1944, 1953, and 1955. From 1942 to 1966, the building supported operations for the repair and overhaul of engines and other aircraft parts. Building 747 was converted into a freight terminal facility in 1966, and the building served as offices and storage facilities. Subsurface soil contamination at AOC 33 is associated with sumps (some recently removed) buried beneath an asphalt access road immediately south of Building 747. The sump portion of AOC 33 is part of the IWL that is undergoing RCRA corrective action termination as an interim status facility. AOC 33 was investigated during the CBA OU RI, CS, and the ESI. No groundwater contamination is associated with AOC 33. Remedial alternatives were evaluated in an EE/CA. The Air Force identified a deed restriction in the AM as the preferred RA. The sump and surrounding soil were removed in 2003. The CERCLA closure report is in preparation. AOC 33 is on property that has been leased by the Air Force to SBIAA. Building 747 has been subleased by SBIAA to several entities for commercial use. The property is currently zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the site is expected to be industrial/commercial-related options for the property, including aviation support. AOC 39 - AOC 39 is located west of Club House Drive and south of the southern perimeter road, where an underground storm drainpipe empties into a grass-covered fairway drainage ditch. The discharge serves storm drain lines that originate along the southern flight line area. An oil/water separator removes oil prior to discharge into the ditch. The discharge point possibly received waste from the flight line and Buildings 695, 763, and 795. Aerial photographs from the 1950s and later indicate that fluids from aircraft repair and fueling emptied into the storm drain system. A 1982 interview record indicated that flight line oils were occasionally observed in the golf course drain. No groundwater contamination is associated with AOC 39. Remedial alternatives of AOC 39 were previously evaluated in an EE/CA. The Air Force selected deed restrictions in the AM as the preferred RA. AOC 39 was evaluated further in the BWFS. AOC 70 - AOC 70 was a percolation pond used for treated IWTP effluent during the mid-1980s to 1993. Although AOC 70 is part of this CERCLA ROD, as part of the former IWTP, AOC 70 also must be closed as part of the RCRA corrective action termination of the interim status facility (two separate closure processes). On December 31, 2004, DTSC-RCRA acknowledged that AOC 70 was clean closed. The 0.25-acre pond site was constructed upon sandy soils that readily facilitated infiltration of the treated effluent into the subsurface. There was no outflow from the pond. The pond dried out when the IWTP ceased functioning in mid-1993. AOC 70 was investigated under the CS Addendum No. 2. RAs were evaluated in an EE/CA. The Air Force selected a soil removal action in the AM as the preferred remedy. The Air Force completed the removal action in 1997 and backfilled the site with certified clean fill. No groundwater contamination is associated with the AOC. AOC 70 is within a parcel of the base that has been leased to IVDA. The property is currently zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the site is expected to be as industrial/commercial-related options for the property consistent with city of San Bernardino zoning. Building 752 - Building 752 is located in the eastern portion of the CBA adjacent to the airfield. The building was used during the 1940s and 1950s for the repair of aircraft instruments, including painting instrument dials with radio-luminescent paint containing radium-226. The room used for painting dials was sealed in 1955 when painting operations ceased. During the period that painting occurred, paint waste was flushed into a sink connected to the sanitary sewer. Investigations of the sink and piping system showed that they were contaminated by radium-226. This included the piping system outside of the building to where it connected with the sanitary sewer. Cleanup of the interior piping system and interior surfaces of Building

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

752 were handled under separate programs. Cleanup of soils affected by radium-226 waste outside of Building 752 are being addressed in this ROD. To determine whether soils outside of the building had been affected by the discharge of paint waste into the sanitary sewer pipe, the pipe was excavated for visual characterization and soil sampling. The pipe was constructed of 6-inch vitreous clay in 3-foot sections. Two soil samples collected as part of the initial site characterization were found to contain radium-226 at 169 ?10 picoCuries per gram (pCi/g) and 1,940 ?20 pCi/g (background is 1.41 pCi/g). The entire waste line piping was surveyed with a field instrument and found to exhibit gamma radiation above background levels. Excavation of the piping system was conducted July 23 through August 1, 1996. The excavation was approximately 3 feet deep where the waste line exited the southwest corner of the building, and extended to a depth of 9 feet where the waste line entered the sanitary sewer. All excavated soil and piping was disposed off site. Before backfilling the trench, a new waste line was installed between the building and the sanitary sewer. After backfilling the trench, asphalt pavement was placed over the excavation. As part of the overall radium-226 investigation of the Building 752 area, additional radium-226 contamination was discovered in an area immediately west of the building. Building drawings from the 1950s indicate a wooden loading dock attached to the building over the affected area. In February 2001, the loading dock area was sampled for radium-226. The investigators determined that the area of concern is 11 by 55 feet, with depth of contamination between 1 and 4 feet bgs. The estimated volume of affected soil is 1,400 cubic feet. Radium-226 contaminated soil was removed in 2004. The closure report is in preparation. All contaminated soil will be properly disposed. Currently the site is not in use. The property is currently zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the building and surrounding area is expected to be industrial/commercial-related options for the property (airfield support). Northeast Base Area PCE Plume - The NBA has two PCE plumes, one in the eastern portion (east PCE plume) where the former Site 2 landfill is situated, and a smaller plume in the central portion (west PCE plume). Only the west PCE plume has been above the maximum contaminant level (MCL) for PCE since April 2003. The average gradient in the NBA has been observed to fluctuate between a low of 0.004 foot per foot (October 2003) and a high of 0.039 foot per foot (April 1996). Seasonal variation remains relatively constant. The source of the contamination contributing to the NBA west PCE plume is not believed to be associated with IRP Site 2. PCE concentrations are higher in the west plume than those in the east plume, whereas they would be expected to be less due to contaminant dispersal. The groundwater flow direction in the NBA is to the west to west-northwest. Groundwater quality data for the NBA plume wells do not indicate significant movement of the plumes, either horizontally or vertically. The property overlying the NBA plume is zoned industrial/commercial by the city of San Bernardino. The projected long-term use for Site 2, which overlies the east plume, is expected to be passive open space or potentially a long-term, open storage area. The projected long-term use for the property over the west plume is industrial/commercial, possibly warehousing. A Record of Decision (ROD) addressing Operable Unit 2 (OU2) was completed in September of 2005.

CERCLIS Assessment History:

Action Code:	001
Action:	DISCOVERY
Date Started:	/ /
Date Completed:	08/01/80
Priority Level:	Not reported
Operable Unit:	SITEWIDE

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 001
Action: PRELIMINARY ASSESSMENT
Date Started: / /
Date Completed: 04/01/84
Priority Level: Low priority for further assessment
Operable Unit: SITEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 001
Action: SITE INSPECTION
Date Started: / /
Date Completed: 04/01/84
Priority Level: Higher priority for further assessment
Operable Unit: SITEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 001
Action: PROPOSAL TO NATIONAL PRIORITIES LIST
Date Started: / /
Date Completed: 10/15/84
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 001
Action: FINAL LISTING ON NATIONAL PRIORITIES LIST
Date Started: / /
Date Completed: 07/22/87
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 001
Action: HAZARD RANKING SYSTEM PACKAGE
Date Started: / /

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Date Completed: 06/01/88
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: EPA Fund-Financed
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 001
Action: INTERAGENCY AGREEMENT NEGOTIATIONS
Date Started: 05/05/87
Date Completed: 06/29/89
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: Federal Enforcement
Planning Status: Primary
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 001
Action: FEDERAL INTERAGENCY AGREEMENT
Date Started: 05/05/87
Date Completed: 06/29/89
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: Federal Enforcement
Planning Status: Primary
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 001
Action: FEDERAL FACILITY REMOVAL
Date Started: 01/04/91
Date Completed: 04/08/92
Priority Level: Cleaned up
Operable Unit: SITEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Primary
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 001
Action: FEDERAL FACILITY REMEDIAL INVESTIGATION/FEASIBILITY STUDY
Date Started: 06/29/89
Date Completed: 11/24/93
Priority Level: Not reported
Operable Unit: CENTRAL BASE AREA
Primary Responsibility: Federal Facilities
Planning Status: Primary
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 001

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Action:	RECORD OF DECISION
Date Started:	/ /
Date Completed:	11/24/93
Priority Level:	Not reported
Operable Unit:	CENTRAL BASE AREA
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

Action Code:	001
Action:	FEDERAL FACILITY REMEDIAL DESIGN
Date Started:	11/24/93
Date Completed:	09/16/94
Priority Level:	Not reported
Operable Unit:	CENTRAL BASE AREA
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

Action Code:	001
Action:	ENGINEERING EVALUATION/COST ANALYSIS
Date Started:	/ /
Date Completed:	03/29/96
Priority Level:	Not reported
Operable Unit:	BASEWIDE
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

Action Code:	001
Action:	FEDERAL FACILITY REMEDIAL ACTION
Date Started:	09/16/94
Date Completed:	07/26/96
Priority Level:	Not reported
Operable Unit:	CENTRAL BASE AREA
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

Action Code:	017
Action:	FEDERAL FACILITY REMOVAL
Date Started:	09/20/96
Date Completed:	11/15/96
Priority Level:	Not reported
Operable Unit:	BASEWIDE
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Action Code:	006
Action:	FEDERAL FACILITY REMOVAL
Date Started:	03/25/96
Date Completed:	04/22/97
Priority Level:	Partially Cleaned up
Operable Unit:	BASEWIDE
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

Action Code:	003
Action:	RECORD OF DECISION
Date Started:	/ /
Date Completed:	06/25/97
Priority Level:	Not reported
Operable Unit:	BASEWIDE
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

Action Code:	012
Action:	FEDERAL FACILITY REMOVAL
Date Started:	04/15/96
Date Completed:	07/22/97
Priority Level:	Not reported
Operable Unit:	BASEWIDE
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

Action Code:	008
Action:	FEDERAL FACILITY REMOVAL
Date Started:	04/18/96
Date Completed:	12/19/97
Priority Level:	Partially Cleaned up
Operable Unit:	BASEWIDE
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Non-Time Critical
Action Anomaly:	Not reported

Action Code:	011
Action:	FEDERAL FACILITY REMOVAL
Date Started:	06/25/97
Date Completed:	12/08/98
Priority Level:	Not reported
Operable Unit:	BASEWIDE
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Action Anomaly: Not reported

Action Code: 009
Action: FEDERAL FACILITY REMOVAL
Date Started: 06/30/97
Date Completed: 12/08/98
Priority Level: Not reported
Operable Unit: BASEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 002
Action: FEDERAL FACILITY REMOVAL
Date Started: 12/21/95
Date Completed: 07/28/99
Priority Level: Not reported
Operable Unit: BASEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Primary
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 007
Action: FEDERAL FACILITY REMOVAL
Date Started: 04/25/96
Date Completed: 09/30/99
Priority Level: Stabilized
Operable Unit: BASEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Approved
Urgency Indicator: Non-Time Critical
Action Anomaly: Not reported

Action Code: 001
Action: FEDERAL FACILITY FIVE YEAR REVIEW
Date Started: 03/05/99
Date Completed: 10/27/99
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 003
Action: FEDERAL FACILITY REMEDIAL INVESTIGATION/FEASIBILITY STUDY
Date Started: 10/01/98
Date Completed: 06/10/03
Priority Level: Not reported
Operable Unit: BASEWIDE
Primary Responsibility: Federal Facilities

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 016
Action: FEDERAL FACILITY REMOVAL
Date Started: 12/11/03
Date Completed: 12/03/04
Priority Level: Not reported
Operable Unit: BASEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 002
Action: FEDERAL FACILITY FIVE YEAR REVIEW
Date Started: 02/28/05
Date Completed: 09/20/05
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 014
Action: FEDERAL FACILITY REMOVAL
Date Started: 11/24/03
Date Completed: 09/29/05
Priority Level: Not reported
Operable Unit: BASEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 015
Action: FEDERAL FACILITY REMOVAL
Date Started: 12/17/03
Date Completed: 09/29/05
Priority Level: Not reported
Operable Unit: BASEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 013
Action: FEDERAL FACILITY REMOVAL
Date Started: 02/02/04
Date Completed: 09/29/05
Priority Level: Not reported

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Operable Unit: BASEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 002
Action: RECORD OF DECISION
Date Started: / /
Date Completed: 09/29/05
Priority Level: Final Remedy Selected at Site
Operable Unit: BASEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Primary
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 001
Action: OPERATIONS AND MAINTENANCE
Date Started: 07/26/96
Date Completed: 12/21/05
Priority Level: Not reported
Operable Unit: CENTRAL BASE AREA
Primary Responsibility: Federal Facilities
Planning Status: Primary
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 001
Action: PRELIMINARY CLOSE-OUT REPORT PREPARED
Date Started: / /
Date Completed: 05/16/06
Priority Level: Not reported
Operable Unit: BASEWIDE
Primary Responsibility: EPA Fund-Financed
Planning Status: Primary
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 003
Action: FEDERAL FACILITY FIVE YEAR REVIEW
Date Started: / /
Date Completed: 09/30/10
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 001
Action: Restoration Advisory Board
Date Started: 12/01/94

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Date Completed: / /
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 002
Action: OPERATIONS AND MAINTENANCE
Date Started: 11/28/99
Date Completed: / /
Priority Level: Not reported
Operable Unit: BASEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Federal Register Details:
Fed Register Date: 07/22/87
Fed Register Volume: 52
Page Number: 27620

Fed Register Date: 10/15/84
Fed Register Volume: 49
Page Number: 40320

CORRACTS:

EPA ID: CA4570024345
EPA Region: 09
Area Name: CENTRAL BASE AREA OU
Actual Date: 19950601
Action: CA550 - Certification Of Remedy Completion Or Construction Completion
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA4570024345
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 19950601
Action: CA550RC
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security
Original schedule date: 19950601
Schedule end date: Not reported

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

EPA ID: CA4570024345
EPA Region: 09
Area Name: CENTRAL BASE AREA OU
Actual Date: 19920501
Action: CA650 - Stabilization Construction Completed
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA4570024345
EPA Region: 09
Area Name: CENTRAL BASE AREA OU
Actual Date: 19930205
Action: CA200 - RFI Approved
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA4570024345
EPA Region: 09
Area Name: CENTRAL BASE AREA OU
Actual Date: 19930205
Action: CA300 - CMS Workplan Approved
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA4570024345
EPA Region: 09
Area Name: CENTRAL BASE AREA OU
Actual Date: 19930205
Action: CA350 - CMS Approved
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA4570024345
EPA Region: 09
Area Name: CENTRAL BASE AREA OU
Actual Date: 19930205
Action: CA150 - RFI Workplan Approved
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA4570024345
EPA Region: 09
Area Name: CENTRAL BASE AREA OU
Actual Date: 19941007
Action: CA450 - Corrective Measures Design Approved
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA4570024345
EPA Region: 09
Area Name: CENTRAL BASE AREA OU
Actual Date: 19941007
Action: CA500 - CMI Workplan Approved
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA4570024345
EPA Region: 09
Area Name: CENTRAL BASE AREA OU
Actual Date: 19890713
Action: CA600GW - Stabilization Measures Implemented, Groundwater extraction and treatment
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA4570024345
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 19980618
Action: CA750YE - Migration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security
Original schedule date: 19980618
Schedule end date: Not reported

EPA ID: CA4570024345
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20000522

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Action: CA725YE - Current Human Exposures Under Control, Yes, Current Human Exposures Under Control has been verified
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security
Original schedule date: 20000522
Schedule end date: Not reported

EPA ID: CA4570024345
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20000522
Action: CA750NO - Migration of Contaminated Groundwater under Control, Unacceptable migration of contaminated groundwater is observed or expected
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security
Original schedule date: 20000522
Schedule end date: Not reported

EPA ID: CA4570024345
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 19931124
Action: CA400 - Date For Remedy Selection (CM Imposed)
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security
Original schedule date: 19931124
Schedule end date: Not reported

EPA ID: CA4570024345
EPA Region: 09
Area Name: CENTRAL BASE AREA OU
Actual Date: 19931124
Action: CA400 - Date For Remedy Selection (CM Imposed)
NAICS Code(s): 332813 92811 92811
Electroplating, Plating, Polishing, Anodizing, and Coloring
National Security
National Security
Original schedule date: Not reported
Schedule end date: Not reported

RCRA-TSDF:
Date form received by agency: 09/01/1996
Facility name: USAF NORTON AFB
Facility address: 305 S TIPPECANOE AVE
SAN BERNARDINO, CA 92408
EPA ID: CA4570024345
Mailing address: 63RD CIV ENG SQU/DEEV
NORTON AFB, CA 92409
Contact: Not reported
Contact address: Not reported

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

	Not reported
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Land type:	Federal
Classification:	TSDF
Description:	Handler is engaged in the treatment, storage or disposal of hazardous waste

Owner/Operator Summary:

Owner/operator name:	MULTIPLE OPS - USAF & DPDO
Owner/operator address:	US DEPT OF AIR FORCE NORTON CITY NOT REPORTED, CA 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(714) 382-3909
Legal status:	Federal
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	US AIR FORCE
Owner/operator address:	NORTON AFB SAN BERNARDINO, CA 92409
Owner/operator country:	Not reported
Owner/operator telephone:	(714) 382-3909
Legal status:	Federal
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	Yes
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	09/01/1996
Site name:	USAF NORTON AFB
Classification:	Small Quantity Generator

Date form received by agency:	03/11/1996
Site name:	NORTON AIR FORCE BASE
Classification:	Large Quantity Generator

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Date form received by agency: 03/28/1994
Site name: USAF NORTON AFB
Classification: Large Quantity Generator

Date form received by agency: 02/28/1992
Site name: NORTON AIR FORCE BASE
Classification: Large Quantity Generator

Date form received by agency: 04/17/1990
Site name: NORTON AIR FORCE BASE
Classification: Large Quantity Generator

Date form received by agency: 08/18/1980
Site name: USAF NORTON AFB
Classification: Large Quantity Generator

Corrective Action Summary:

Event date: 04/01/1984
Event: CA049SI

Event date: 06/01/1984
Event: CA029SF

Event date: 06/01/1984
Event: CA049PA

Event date: 06/01/1984
Event: RFA Completed

Event date: 07/13/1989
Event: RFI Imposition

Event date: 07/13/1989
Event: Stabilization Measures Implemented, Groundwater extraction and treatment (e.g., to achieve groundwater containment, to achieve MCL).

Event date: 07/13/1989
Event: CMS Imposition

Event date: 05/01/1992
Event: Stabilization Construction Completed

Event date: 02/05/1993
Event: RFI Approved

Event date: 02/05/1993
Event: CMS Workplan Approved

Event date: 02/05/1993
Event: RFI Workplan Approved

Event date: 02/05/1993
Event: CMS Approved

Event date: 11/24/1993
Event: Date For Remedy Selection (CM Imposed)

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Event date: 11/24/1993
Event: Date For Remedy Selection (CM Imposed)

Event date: 10/07/1994
Event: CMI Workplan Approved

Event date: 10/07/1994
Event: Corrective Measures Design Approved

Event date: 06/01/1995
Event: Certification Of Remedy Completion Or Construction Completion

Event date: 06/01/1995
Event: CA550RC

Event date: 01/01/1996
Event: CA Responsibility Referred To A Non-RCRA Federal Authority, Corrective Action at the facility or area referred to CERCLA.

Event date: 06/18/1998
Event: Current Human Exposures under Control, Yes, Current Human Exposures Under Control has been verified. Based on a review of information contained in the EI determination, current human exposures are expected to be under control at the facility under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

Event date: 06/18/1998
Event: CA Prioritization, Facility or area was assigned a medium corrective action priority.

Event date: 06/18/1998
Event: CA Responsibility Referred To A Non-RCRA Federal Authority

Event date: 06/18/1998
Event: Stabilization Measures Evaluation,This facility is not amenable to stabilization activity at the present time for reasons other than 1- it appears to be technically infeasible or inappropriate (NF) or 2- there is a lack of technical information (IN). Reasons for this conclusion may be the status of closure at the facility, the degree of risk, timing considerations, the status of corrective action work at the facility, or other administrative considerations.

Event date: 06/18/1998
Event: Igration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified. Based on a review of information contained in the EI determination, it has been determined that migration of contaminated groundwater is under control at the facility. Specifically, this determination indicates that the migration of contaminated groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the existing area of contaminated groundwater. This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

Event date: 06/18/1998

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Event: Igration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified. Based on a review of information contained in the EI determination, it has been determined that migration of contaminated groundwater is under control at the facility. Specifically, this determination indicates that the migration of contaminated groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the existing area of contaminated groundwater. This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

Event date: 05/22/2000
Event: Igration of Contaminated Groundwater under Control, Unacceptable migration of contaminated groundwater is observed or expected.

Event date: 05/22/2000
Event: Igration of Contaminated Groundwater under Control, Unacceptable migration of contaminated groundwater is observed or expected.

Event date: 05/22/2000
Event: Current Human Exposures under Control, Yes, Current Human Exposures Under Control has been verified. Based on a review of information contained in the EI determination, current human exposures are expected to be under control at the facility under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

Event date: 05/22/2000
Event: Current Human Exposures under Control, Yes, Current Human Exposures Under Control has been verified. Based on a review of information contained in the EI determination, current human exposures are expected to be under control at the facility under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: TSD IS-Ground-Water Monitoring
Date violation determined: 04/22/2003
Date achieved compliance: 07/27/2005
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/16/2005
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 264.170-177.I
Area of violation: TSD - General
Date violation determined: 04/22/1993
Date achieved compliance: 01/28/1994
Violation lead agency: State

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Enforcement action:	WRITTEN INFORMAL
Enforcement action date:	04/22/1993
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	Not reported
Final penalty amount:	Not reported
Paid penalty amount:	Not reported

Regulation violated:	F - 264.190-201.J
Area of violation:	TSD - General
Date violation determined:	04/22/1993
Date achieved compliance:	01/28/1994
Violation lead agency:	State
Enforcement action:	WRITTEN INFORMAL
Enforcement action date:	04/22/1993
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	Not reported
Final penalty amount:	Not reported
Paid penalty amount:	Not reported

Regulation violated:	F - 262.30-34.C
Area of violation:	Generators - General
Date violation determined:	04/22/1993
Date achieved compliance:	01/28/1994
Violation lead agency:	State
Enforcement action:	WRITTEN INFORMAL
Enforcement action date:	04/22/1993
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	Not reported
Final penalty amount:	Not reported
Paid penalty amount:	Not reported

Regulation violated:	F - 262.40-43.D
Area of violation:	Generators - General
Date violation determined:	04/22/1993
Date achieved compliance:	01/28/1994
Violation lead agency:	State
Enforcement action:	WRITTEN INFORMAL
Enforcement action date:	04/22/1993
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	Not reported
Final penalty amount:	Not reported
Paid penalty amount:	Not reported

Regulation violated:	F - 264.30-37.C
Area of violation:	TSD - General
Date violation determined:	05/15/1992
Date achieved compliance:	06/19/1992
Violation lead agency:	State
Enforcement action:	Not reported

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 05/15/1992
Date achieved compliance: 06/19/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 270
Area of violation: TSD - General
Date violation determined: 05/15/1992
Date achieved compliance: 06/19/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 05/15/1992
Date achieved compliance: 06/19/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 270
Area of violation: TSD - General
Date violation determined: 02/27/1991
Date achieved compliance: 05/16/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/12/1991

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 10/30/1989
Date achieved compliance: 03/14/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/11/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 07/26/1988
Date achieved compliance: 10/30/1989
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.90-94.F
Area of violation: TSD IS-Ground-Water Monitoring
Date violation determined: 08/20/1987
Date achieved compliance: 07/26/1988
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 08/20/1987
Date achieved compliance: 07/26/1988
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.110-120.G
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 08/20/1987
Date achieved compliance: 07/26/1988
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 270
Area of violation: TSD - General
Date violation determined: 06/23/1987
Date achieved compliance: 08/06/1987
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/06/1987
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 270
Area of violation: TSD - General
Date violation determined: 06/23/1987
Date achieved compliance: 08/06/1987
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 04/19/2016
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 04/29/2015
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 06/19/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 04/11/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 04/25/2006
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 06/22/2005
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 04/22/2003
Evaluation: GROUNDWATER MONITORING EVALUATION
Area of violation: TSD IS-Ground-Water Monitoring
Date achieved compliance: 07/27/2005
Evaluation lead agency: State

Evaluation date: 01/26/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/08/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 01/28/1994
Evaluation lead agency: State

Evaluation date: 03/08/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/28/1994
Evaluation lead agency: State

Evaluation date: 03/30/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 06/19/1992
Evaluation lead agency: State

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Evaluation date: 03/30/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 06/19/1992
Evaluation lead agency: State

Evaluation date: 02/27/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 05/16/1991
Evaluation lead agency: State

Evaluation date: 10/30/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 03/14/1990
Evaluation lead agency: State

Evaluation date: 07/26/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 10/30/1989
Evaluation lead agency: EPA

Evaluation date: 08/20/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Closure/Post-Closure
Date achieved compliance: 07/26/1988
Evaluation lead agency: EPA

Evaluation date: 08/20/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 07/26/1988
Evaluation lead agency: EPA

Evaluation date: 08/20/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD IS-Ground-Water Monitoring
Date achieved compliance: 07/26/1988
Evaluation lead agency: EPA

Evaluation date: 07/30/1987
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 07/30/1987
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 06/23/1987
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: TSD - General

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Date achieved compliance: 08/06/1987
Evaluation lead agency: State

Evaluation date: 06/23/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

US ENG CONTROLS:
EPA ID: CA4570024345
Site ID: 0902760
Name: NORTON AIR FORCE BASE (LNDFLL #2)
Address: I-10/US 395 FORMER NORTON AFB
SAN BERNARDINO, CA 92408
EPA Region: 09
County: SAN BERNARDINO
Event Code: Not reported
Actual Date: 09/30/2005
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 11/24/1993
Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: Air Stripping
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 11/24/1993
Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: Alternate Drinking Water, (N.O.S.)
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 11/24/1993

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: Carbon Adsorption
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 11/24/1993
Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: Discharge
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 11/24/1993
Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: Extraction
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 11/24/1993
Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: Monitoring
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 11/24/1993
Operable Unit: 01

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Contaminated Media : Groundwater
Engineering Control: Pump And Treat
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 11/24/1993
Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: Reinjection
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 11/24/1993
Operable Unit: 01
Contaminated Media : Soil
Engineering Control: Carbon Adsorption
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 11/24/1993
Operable Unit: 01
Contaminated Media : Soil
Engineering Control: Disposal
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 11/24/1993
Operable Unit: 01
Contaminated Media : Soil

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Engineering Control: Excavation
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 11/24/1993
Operable Unit: 01
Contaminated Media : Soil
Engineering Control: Monitoring
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 11/24/1993
Operable Unit: 01
Contaminated Media : Soil
Engineering Control: Soil Vapor Extraction (ex-situ)
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 11/24/1993
Operable Unit: 01
Contaminated Media : Soil
Engineering Control: Soil Vapor Extraction (in-situ)
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 002
Action Name: RECORD OF DECISION
Action Completion date: 09/29/2005
Operable Unit: 02
Contaminated Media : Soil
Engineering Control: Disposal

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 002
Action Name: RECORD OF DECISION
Action Completion date: 09/29/2005
Operable Unit: 02
Contaminated Media : Soil
Engineering Control: Excavation
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 002
Action Name: RECORD OF DECISION
Action Completion date: 09/29/2005
Operable Unit: 02
Contaminated Media : Soil
Engineering Control: No Further Action
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 003
Action Name: RECORD OF DECISION
Action Completion date: 06/25/1997
Operable Unit: 02
Contaminated Media : Groundwater
Engineering Control: No Further Action
Contact Name: Not reported
Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

Action ID: 003
Action Name: RECORD OF DECISION
Action Completion date: 06/25/1997
Operable Unit: 02
Contaminated Media : Soil
Engineering Control: No Further Action
Contact Name: Not reported

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Contact Phone and Ext: Not reported
Latitude: Not reported
Longitude: Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

US INST CONTROL:

EPA ID: CA4570024345
Site ID: 0902760
Name: NORTON AIR FORCE BASE (LNDFLL #2)
Action Name: RECORD OF DECISION
Address: I-10/US 395 FORMER NORTON AFB
SAN BERNARDINO, CA 92408
EPA Region: 09
County: SAN BERNARDINO
Event Code: Not reported
Inst. Control: Deed Restriction
Actual Date: 12/31/1993
Complet. Date: 11/24/1993
Operable Unit: 01
Contaminated Media : Groundwater
Contact Name : Not reported
Contact Phone and Ext : Not reported
Latitude : Not reported
Longitude : Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

EPA ID: CA4570024345
Site ID: 0902760
Name: NORTON AIR FORCE BASE (LNDFLL #2)
Action Name: RECORD OF DECISION
Address: I-10/US 395 FORMER NORTON AFB
SAN BERNARDINO, CA 92408
EPA Region: 09
County: SAN BERNARDINO
Event Code: Not reported
Inst. Control: Deed Restriction
Actual Date: 12/31/1993
Complet. Date: 11/24/1993
Operable Unit: 01
Contaminated Media : Soil
Contact Name : Not reported
Contact Phone and Ext : Not reported
Latitude : Not reported
Longitude : Not reported
Event Code Description: Not reported
GIS Lat/Long Sequence: Not reported
GIS Sequence: Not reported

EPA ID: CA4570024345
Site ID: 0902760
Name: NORTON AIR FORCE BASE (LNDFLL #2)
Action Name: RECORD OF DECISION

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Address:	I-10/US 395 FORMER NORTON AFB SAN BERNARDINO, CA 92408
EPA Region:	09
County:	SAN BERNARDINO
Event Code:	Not reported
Inst. Control:	Covenant
Actual Date:	09/30/2005
Complet. Date:	09/29/2005
Operable Unit:	02
Contaminated Media :	Soil
Contact Name :	Not reported
Contact Phone and Ext :	Not reported
Latitude :	Not reported
Longitude :	Not reported
Event Code Description:	Not reported
GIS Lat/Long Sequence:	Not reported
GIS Sequence:	Not reported

EPA ID:	CA4570024345
Site ID:	0902760
Name:	NORTON AIR FORCE BASE (LNDFLL #2)
Action Name:	RECORD OF DECISION
Address:	I-10/US 395 FORMER NORTON AFB SAN BERNARDINO, CA 92408
EPA Region:	09
County:	SAN BERNARDINO
Event Code:	Not reported
Inst. Control:	Deed Restriction
Actual Date:	06/30/1997
Complet. Date:	06/25/1997
Operable Unit:	02
Contaminated Media :	Soil
Contact Name :	Not reported
Contact Phone and Ext :	Not reported
Latitude :	Not reported
Longitude :	Not reported
Event Code Description:	Not reported
GIS Lat/Long Sequence:	Not reported
GIS Sequence:	Not reported

ROD:

Full-text of USEPA Record of Decision(s) is available from EDR.

PADS:

EPAID:	CA4570024345
Facility name:	USAF NORTON AFB
Facility Address:	63 CES DEV NORTON AFB, CA 92409
Facility country:	US
Generator:	Yes
Storer:	No
Transporter:	No
Disposer:	No
Research facility:	No
Smelter:	No
Facility owner name:	US DOD

NORTON AIR FORCE BASE (LNDFLL #2) (Continued) **1000417274**

Contact title:	Not reported
Contact name:	DIENZO EDMUND M
Contact tel:	(714)382-2444
Contact extension:	Not reported
Mailing address:	63 CES DEV NORTON AFB, CA 92409
Mailing country:	US
Cert. title:	Not reported
Cert. name:	Not reported
Cert. date:	06/22/1990
Date received:	07/11/1990

---

1 **EOD FACILITY** **UXO** **1018154582**
N/A

< 1/8 **SAN BERNARDINO, CA**
1 ft.

Relative:
Higher

Actual:
1040 ft.

UXO:

DoD Component:	Air Force
Sort Order:	3
Installation Name:	NORTON AFB
Facility Address 2:	Not reported
Site ID:	XU403
Site Type:	Unexploded Munitions and Ordnance Area
Latitude:	34.095109
Longitude:	-117.269215

A2 **BONADIMAN-MCCAIN, INC** **LUST** **S101619503**
NW **280 S LENA RD** **SWEEPS UST** **N/A**
< 1/8 **SAN BERNARDINO, CA 92408** **CA FID UST**
0.019 mi. **EMI**
100 ft. **Site 1 of 3 in cluster A** **San Bern. Co. Permit**

Relative:
Lower

Actual:
1035 ft.

LUST:

Region:	STATE
Global Id:	T10000001488
Latitude:	34.0968577827949
Longitude:	-117.271070480347
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	09/30/2015
Lead Agency:	SANTA ANA RWQCB (REGION 8)
Case Worker:	CAB
Local Agency:	Not reported
RB Case Number:	083604073T
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Aquifer used for drinking water supply, Soil, Soil Vapor
Potential Contaminants of Concern:	Diesel, Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T10000001488
Contact Type:	Regional Board Caseworker
Contact Name:	CARL BERNHARDT

BONADIMAN-MCCAIN, INC (Continued) **S101619503**

Organization Name: SANTA ANA RWQCB (REGION 8)
Address: 3737 MAIN STREET, SUITE 500
City: RIVERSIDE
Email: cbernhardt@waterboards.ca.gov
Phone Number: 9517824495

Status History:
Global Id: T10000001488
Status: Completed - Case Closed
Status Date: 09/30/2015

Global Id: T10000001488
Status: Open - Case Begin Date
Status Date: 06/30/2009

Global Id: T10000001488
Status: Open - Eligible for Closure
Status Date: 06/03/2015

Global Id: T10000001488
Status: Open - Remediation
Status Date: 04/04/2014

Global Id: T10000001488
Status: Open - Site Assessment
Status Date: 08/11/2009

Regulatory Activities:
Global Id: T10000001488
Action Type: Other
Date: 06/30/2009
Action: Leak Stopped

Global Id: T10000001488
Action Type: RESPONSE
Date: 06/19/2014
Action: Site Assessment Report

Global Id: T10000001488
Action Type: ENFORCEMENT
Date: 07/19/2012
Action: Staff Letter

Global Id: T10000001488
Action Type: ENFORCEMENT
Date: 11/12/2014
Action: Verbal Communication

Global Id: T10000001488
Action Type: ENFORCEMENT
Date: 06/03/2015
Action: Notification - Public Notice of Case Closure

Global Id: T10000001488
Action Type: RESPONSE
Date: 04/30/2010

BONADIMAN-MCCAIN, INC (Continued) **S101619503**

Action: Monitoring Report - Quarterly

Global Id: T10000001488
Action Type: RESPONSE
Date: 09/30/2015
Action: Well Destruction Report

Global Id: T10000001488
Action Type: RESPONSE
Date: 12/08/2009
Action: Soil and Water Investigation Workplan

Global Id: T10000001488
Action Type: RESPONSE
Date: 12/31/2014
Action: Email Correspondence

Global Id: T10000001488
Action Type: ENFORCEMENT
Date: 08/16/2010
Action: Staff Letter

Global Id: T10000001488
Action Type: RESPONSE
Date: 06/10/2013
Action: Well Installation Workplan - Regulator Responded

Global Id: T10000001488
Action Type: RESPONSE
Date: 11/30/2012
Action: Remedial Investigation Workplan - Regulator Responded

Global Id: T10000001488
Action Type: RESPONSE
Date: 01/30/2012
Action: Monitoring Report - Semi-Annually

Global Id: T10000001488
Action Type: RESPONSE
Date: 09/30/2011
Action: Monitoring Report - Semi-Annually

Global Id: T10000001488
Action Type: ENFORCEMENT
Date: 12/14/2009
Action: Referral to Regional Board

Global Id: T10000001488
Action Type: ENFORCEMENT
Date: 12/14/2009
Action: Referral to Regional Board

Global Id: T10000001488
Action Type: RESPONSE
Date: 06/20/2013
Action: Verbal Communication - Regulator Responded

BONADIMAN-MCCAIN, INC (Continued) **S101619503**

Global Id: T10000001488
Action Type: RESPONSE
Date: 08/28/2013
Action: Corrective Action Plan / Remedial Action Plan - Regulator Responded

Global Id: T10000001488
Action Type: RESPONSE
Date: 02/25/2015
Action: Soil and Water Investigation Workplan - Addendum - Regulator Responded

Global Id: T10000001488
Action Type: ENFORCEMENT
Date: 11/19/2012
Action: Site Visit / Inspection / Sampling

Global Id: T10000001488
Action Type: ENFORCEMENT
Date: 09/30/2015
Action: Closure/No Further Action Letter

Global Id: T10000001488
Action Type: Other
Date: 06/30/2009
Action: Leak Discovery

Global Id: T10000001488
Action Type: RESPONSE
Date: 04/20/2015
Action: Monitoring Report - Semi-Annually

Global Id: T10000001488
Action Type: Other
Date: 07/29/2009
Action: Leak Reported

Global Id: T10000001488
Action Type: ENFORCEMENT
Date: 12/28/2009
Action: Technical Correspondence / Assistance / Other

Global Id: T10000001488
Action Type: ENFORCEMENT
Date: 12/29/2009
Action: File review

Global Id: T10000001488
Action Type: ENFORCEMENT
Date: 01/04/2010
Action: Staff Letter

Global Id: T10000001488
Action Type: ENFORCEMENT
Date: 08/18/2010
Action: Staff Letter

Global Id: T10000001488
Action Type: RESPONSE

BONADIMAN-MCCAIN, INC (Continued) **S101619503**

Date: 12/24/2014
Action: Email Correspondence - Regulator Responded

Global Id: T10000001488
Action Type: RESPONSE
Date: 11/14/2014
Action: Soil and Water Investigation Workplan - Regulator Responded

Global Id: T10000001488
Action Type: RESPONSE
Date: 04/09/2015
Action: Risk Assessment Report

Global Id: T10000001488
Action Type: RESPONSE
Date: 08/04/2014
Action: Monitoring Report - Semi-Annually

Global Id: T10000001488
Action Type: ENFORCEMENT
Date: 01/30/2013
Action: Staff Letter

Global Id: T10000001488
Action Type: REMEDIATION
Date: 04/04/2014
Action: Soil Vapor Extraction (SVE)

Global Id: T10000001488
Action Type: ENFORCEMENT
Date: 08/10/2015
Action: Staff Letter

Global Id: T10000001488
Action Type: RESPONSE
Date: 04/17/2015
Action: Remedial Progress Report

SWEEPS UST:
Status: Active
Comp Number: 639
Number: 9
Board Of Equalization: 44-019760
Referral Date: 03-23-92
Action Date: 03-23-92
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 36-000-000639-000001
Tank Status: A
Capacity: 2000
Active Date: 07-11-88
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: 3

BONADIMAN-MCCAIN, INC (Continued) **S101619503**

Status:	Active
Comp Number:	639
Number:	9
Board Of Equalization:	44-019760
Referral Date:	03-23-92
Action Date:	03-23-92
Created Date:	02-29-88
Owner Tank Id:	2
SWRCB Tank Id:	36-000-000639-000002
Tank Status:	A
Capacity:	2000
Active Date:	07-11-88
Tank Use:	M.V. FUEL
STG:	P
Content:	LEADED
Number Of Tanks:	Not reported

Status:	Active
Comp Number:	639
Number:	9
Board Of Equalization:	44-019760
Referral Date:	03-23-92
Action Date:	03-23-92
Created Date:	02-29-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	36-000-000639-000003
Tank Status:	A
Capacity:	10000
Active Date:	07-11-88
Tank Use:	M.V. FUEL
STG:	P
Content:	DIESEL
Number Of Tanks:	Not reported

CA FID UST:

Facility ID:	36008030
Regulated By:	UTNKA
Regulated ID:	00000639
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	P O BOX
Mailing Address 2:	Not reported
Mailing City,St,Zip:	SAN BERNARDINO 92408
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

EMI:

Year:	1990
County Code:	36

BONADIMAN-MCCAIN, INC (Continued) **S101619503**

Air Basin:	SC
Facility ID:	56461
Air District Name:	SC
SIC Code:	8711
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	80
Reactive Organic Gases Tons/Yr:	70
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1993
County Code:	36
Air Basin:	SC
Facility ID:	56461
Air District Name:	SC
SIC Code:	8711
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1995
County Code:	36
Air Basin:	SC
Facility ID:	56461
Air District Name:	SC
SIC Code:	8711
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0001536
Owner:	RIVERSIDE CONSTRUCTION CO
Permit Number:	PT0011810
Permit Category:	UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status:	INACTIVE
Expiration Date:	07/31/2009

BONADIMAN-MCCAIN, INC (Continued) **S101619503**

Region: SAN BERNARDINO
Facility ID: FA0001536
Owner: RIVERSIDE CONSTRUCTION CO
Permit Number: PT0011811
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: INACTIVE
Expiration Date: 07/31/2009

Region: SAN BERNARDINO
Facility ID: FA0001536
Owner: RIVERSIDE CONSTRUCTION CO
Permit Number: PT0002277
Permit Category: HAZMAT HANDLER - UST ONLY
Facility Status: INACTIVE
Expiration Date: 07/31/2009

Region: SAN BERNARDINO
Facility ID: FA0001536
Owner: RIVERSIDE CONSTRUCTION CO
Permit Number: PT0011812
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: INACTIVE
Expiration Date: 07/31/2009

A3 **BONADIMAN-MCCAIN INC.** **UST** **U001576035**
NW **280 S LENA RD** **N/A**
< 1/8 **SAN BERNARDINO, CA 92408**
0.019 mi.
100 ft. **Site 2 of 3 in cluster A**

Relative:
Lower

Actual:
1035 ft.

UST:
Facility ID: 86008938
Permitting Agency: SAN BERNARDINO COUNTY
Latitude: 34.097986
Longitude: -117.27017

A4 **GENERAL SEATING CO** **SWEEPS UST** **S101591052**
NW **585 E TENNIS COURT LN** **CA FID UST** **N/A**
< 1/8 **SAN BERNARDINO, CA 92408**
0.061 mi.
322 ft. **Site 3 of 3 in cluster A**

Relative:
Lower

Actual:
1033 ft.

SWEEPS UST:
Status: Not reported
Comp Number: 9207
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-009207-000001
Tank Status: Not reported
Capacity: 1
Active Date: Not reported
Tank Use: UNKNOWN

GENERAL SEATING CO (Continued) **S101591052**

STG: PRODUCT
Content: UNKNOWN
Number Of Tanks: 1

CA FID UST:
Facility ID: 36001001
Regulated By: UTNKI
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: Not reported
Mail To: Not reported
Mailing Address: 585 E TENNIS COURT LN
Mailing Address 2: Not reported
Mailing City,St,Zip: SAN BERNARDINO 92408
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

5
ENE
< 1/8
0.082 mi.
434 ft.

KOHL'S DEPARTMENT STORES- DC #855
890 E MILL ST
SAN BERNARDINO, CA 92408

San Bern. Co. Permit **S106718502**
N/A

Relative:
Higher

Actual:
1046 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0009412
Owner: KOHL'S DEPARTMENT STORES
Permit Number: PT0016091
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 01/31/2017

Region: SAN BERNARDINO
Facility ID: FA0009412
Owner: KOHL'S DEPARTMENT STORES
Permit Number: PT0016122
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 01/31/2017

6 SSE < 1/8 0.088 mi. 463 ft. | **MOBIL #18-ARM**
807
SAN BERNARDINO, CA 92408 | **LUST** | **S104747451**
HIST CORTESE | **N/A**

Relative: Higher

Actual: 1045 ft.

LUST:

Region:	STATE
Global Id:	T0607100163
Latitude:	34.091996396
Longitude:	-117.3011125
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	10/30/2012
Lead Agency:	SANTA ANA RWQCB (REGION 8)
Case Worker:	RS
Local Agency:	SAN BERNARDINO COUNTY
RB Case Number:	083601353T
LOC Case Number:	90021
File Location:	Regional Board
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Other Solvent or Non-Petroleum Hydrocarbon
Site History:	.

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0607100163
Contact Type:	Local Agency Caseworker
Contact Name:	CATHERINE RICHARDS
Organization Name:	SAN BERNARDINO COUNTY
Address:	620 SOUTH E STREET
City:	SAN BERNARDINO
Email:	crichards@sbcfire.org
Phone Number:	9093868419

Global Id:	T0607100163
Contact Type:	Regional Board Caseworker
Contact Name:	ROSE SCOTT
Organization Name:	SANTA ANA RWQCB (REGION 8)
Address:	3737 MAIN STREET, SUITE 500
City:	RIVERSIDE
Email:	rscott@waterboards.ca.gov
Phone Number:	9513206375

Status History:

Global Id:	T0607100163
Status:	Completed - Case Closed
Status Date:	05/08/1989

Global Id:	T0607100163
Status:	Completed - Case Closed
Status Date:	10/30/2012

Global Id:	T0607100163
Status:	Open - Case Begin Date
Status Date:	05/08/1989

Global Id:	T0607100163

MOBIL #18-ARM (Continued) **S104747451**

Status: Open - Eligible for Closure
Status Date: 09/25/2012

Global Id: T0607100163
Status: Open - Remediation
Status Date: 08/10/1992

Global Id: T0607100163
Status: Open - Remediation
Status Date: 05/02/1994

Global Id: T0607100163
Status: Open - Remediation
Status Date: 04/26/2005

Global Id: T0607100163
Status: Open - Remediation
Status Date: 07/15/2005

Global Id: T0607100163
Status: Open - Remediation
Status Date: 07/21/2005

Global Id: T0607100163
Status: Open - Remediation
Status Date: 10/14/2005

Global Id: T0607100163
Status: Open - Remediation
Status Date: 07/12/2007

Global Id: T0607100163
Status: Open - Reopen Case
Status Date: 11/21/1989

Global Id: T0607100163
Status: Open - Site Assessment
Status Date: 11/22/1989

Global Id: T0607100163
Status: Open - Site Assessment
Status Date: 11/05/1990

Global Id: T0607100163
Status: Open - Site Assessment
Status Date: 05/24/2000

Global Id: T0607100163
Status: Open - Site Assessment
Status Date: 10/13/2006

Global Id: T0607100163
Status: Open - Verification Monitoring
Status Date: 06/01/1995

Regulatory Activities:
Global Id: T0607100163

MOBIL #18-ARM (Continued) **S104747451**

Action Type: ENFORCEMENT
Date: 05/01/2007
Action: Verbal Enforcement

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 11/02/2006
Action: Staff Letter

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 12/31/2007
Action: Staff Letter

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 06/13/2005
Action: * No Action

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 03/05/2003
Action: * Verbal Communication

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 10/30/2012
Action: Notification - Public Notice of Case Closure

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 10/28/2012
Action: Technical Correspondence / Assistance / Other

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 12/12/2008
Action: File review

Global Id: T0607100163
Action Type: RESPONSE
Date: 10/30/2005
Action: Remedial Progress Report

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 01/19/2012
Action: File Review - Closure

Global Id: T0607100163
Action Type: RESPONSE
Date: 07/30/2005
Action: Monitoring Report - Quarterly

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 07/15/2005

MOBIL #18-ARM (Continued) **S104747451**

Action: * No Action

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 02/08/2011
Action: Staff Letter

Global Id: T0607100163
Action Type: RESPONSE
Date: 10/30/2004
Action: Other Report / Document

Global Id: T0607100163
Action Type: RESPONSE
Date: 01/30/2007
Action: Monitoring Report - Quarterly

Global Id: T0607100163
Action Type: RESPONSE
Date: 01/30/2007
Action: Other Report / Document

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 10/15/2004
Action: * No Action

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 07/19/2005
Action: * No Action

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 07/20/2006
Action: Technical Correspondence / Assistance / Other

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 10/07/2010
Action: File review

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 07/14/2005
Action: * No Action

Global Id: T0607100163
Action Type: RESPONSE
Date: 07/30/2005
Action: Remedial Progress Report

Global Id: T0607100163
Action Type: Other
Date: 10/04/1989
Action: Leak Discovery

MOBIL #18-ARM (Continued) **S104747451**

Global Id: T0607100163
Action Type: Other
Date: 11/08/1989
Action: Leak Reported

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 07/26/2005
Action: * No Action

Global Id: T0607100163
Action Type: RESPONSE
Date: 04/30/2003
Action: Remedial Progress Report

Global Id: T0607100163
Action Type: REMEDIATION
Date: 01/22/2002
Action: Soil Vapor Extraction (SVE)

Global Id: T0607100163
Action Type: RESPONSE
Date: 07/30/2006
Action: Monitoring Report - Quarterly

Global Id: T0607100163
Action Type: RESPONSE
Date: 10/30/2006
Action: Monitoring Report - Quarterly

Global Id: T0607100163
Action Type: RESPONSE
Date: 10/30/2006
Action: Soil and Water Investigation Workplan

Global Id: T0607100163
Action Type: RESPONSE
Date: 10/30/2006
Action: Other Report / Document

Global Id: T0607100163
Action Type: RESPONSE
Date: 07/30/2006
Action: Other Report / Document

Global Id: T0607100163
Action Type: RESPONSE
Date: 12/15/2006
Action: Other Report / Document

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 06/11/2009
Action: Technical Correspondence / Assistance / Other

Global Id: T0607100163
Action Type: ENFORCEMENT

MOBIL #18-ARM (Continued) **S104747451**

Date: 07/28/2009
Action: Staff Letter

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 10/25/2005
Action: * No Action

Global Id: T0607100163
Action Type: RESPONSE
Date: 07/30/2007
Action: Monitoring Report - Quarterly

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 09/04/2003
Action: * Verbal Communication

Global Id: T0607100163
Action Type: RESPONSE
Date: 01/30/2003
Action: Remedial Progress Report

Global Id: T0607100163
Action Type: RESPONSE
Date: 01/30/2003
Action: Monitoring Report - Quarterly

Global Id: T0607100163
Action Type: RESPONSE
Date: 10/30/2002
Action: Monitoring Report - Quarterly

Global Id: T0607100163
Action Type: RESPONSE
Date: 10/30/2002
Action: Remedial Progress Report

Global Id: T0607100163
Action Type: RESPONSE
Date: 07/30/2002
Action: Monitoring Report - Quarterly

Global Id: T0607100163
Action Type: RESPONSE
Date: 07/30/2002
Action: Remedial Progress Report

Global Id: T0607100163
Action Type: RESPONSE
Date: 07/30/2005
Action: Remedial Progress Report

Global Id: T0607100163
Action Type: RESPONSE
Date: 04/30/2005
Action: Remedial Progress Report

MOBIL #18-ARM (Continued) **S104747451**

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 08/20/2012
Action: Technical Correspondence / Assistance / Other

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 08/28/2012
Action: Notification - Preclosure

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 08/28/2012
Action: Staff Letter

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 10/30/2012
Action: Closure/No Further Action Letter

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 07/26/2012
Action: Technical Correspondence / Assistance / Other

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 08/19/1999
Action: Staff Letter

Global Id: T0607100163
Action Type: RESPONSE
Date: 04/30/2003
Action: Other Report / Document

Global Id: T0607100163
Action Type: RESPONSE
Date: 03/05/2003
Action: Other Report / Document

Global Id: T0607100163
Action Type: ENFORCEMENT
Date: 03/26/2001
Action: Staff Letter

Global Id: T0607100163
Action Type: RESPONSE
Date: 07/30/2007
Action: Remedial Progress Report

Global Id: T0607100163
Action Type: RESPONSE
Date: 12/30/2004
Action: Monitoring Report - Quarterly

Global Id: T0607100163
Action Type: RESPONSE

MOBIL #18-ARM (Continued) **S104747451**

Date:	07/30/2005
Action:	Other Report / Document
Global Id:	T0607100163
Action Type:	ENFORCEMENT
Date:	03/16/2010
Action:	File Review - Closure
Global Id:	T0607100163
Action Type:	RESPONSE
Date:	10/30/2004
Action:	Monitoring Report - Quarterly

LUST REG 8:

Region:	8
County:	San Bernardino
Regional Board:	Santa Ana Region
Facility Status:	Pollution Characterization
Case Number:	083601353T
Local Case Num:	90021
Case Type:	Aquifer affected
Substance:	Hydrocarbons
Qty Leaked:	Not reported
Abate Method:	EDVEGT
Cross Street:	H STREET
Enf Type:	VER
Funding:	Not reported
How Discovered:	Not reported
How Stopped:	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
Global ID:	T0607100163
How Stopped Date:	Not reported
Enter Date:	11/17/1989
Date Confirmation of Leak Began:	Not reported
Date Preliminary Assessment Began:	11/22/1989
Discover Date:	10/4/1989
Enforcement Date:	Not reported
Close Date:	Not reported
Date Prelim Assessment Workplan Submitted:	Not reported
Date Pollution Characterization Began:	5/24/2000
Date Remediation Plan Submitted:	8/10/1992
Date Remedial Action Underway:	5/2/1994
Date Post Remedial Action Monitoring:	6/1/1995
Enter Date:	11/17/1989
GW Qualifies:	=
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Yes
Oversite Program:	LUST
Latitude:	34.0919964
Longitude:	-117.3011125
MTBE Date:	2/13/1996
Max MTBE GW:	760
MTBE Concentration:	1

MOBIL #18-ARM (Continued) **S104747451**

Max MTBE Soil:	Not reported
MTBE Fuel:	0
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class:	B
Staff:	RS
Staff Initials:	CR2
Lead Agency:	Regional Board
Local Agency:	36000L
Hydr Basin #:	UPPER SANTA ANA VALL
Beneficial:	AGR, PROC, IND, MUN
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported
Summary:	CONFIRMATION BORINGS REVEALED 101 PPM OF BENZENE AT 60' BGS. ARS REACHED BAT.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	36
Reg By:	LTNKA
Reg Id:	083601353T

B7 **EDR Hist Auto** **1015613199**
South **715 E MILL ST** **N/A**
< 1/8 **SAN BERNARDINO, CA 92408**
0.088 mi.
465 ft. **Site 1 of 2 in cluster B**

Relative:
Lower

Actual:
1039 ft.

EDR Historical Auto Stations:

Name:	H & R SMOG CHECK & AUTOMOBILE RE PAI
Year:	2005
Address:	715 E MILL ST
Name:	H & R SMOG CHECK & AUTOMOBILE REPAIR
Year:	2008
Address:	715 E MILL ST
Name:	H & R SMOG CHECK & AUTOMOBILE REPAIR
Year:	2009
Address:	715 E MILL ST
Name:	H & R SMOG CHECK & AUTO REPAIR
Year:	2010
Address:	715 E MILL ST
Name:	H & R SMOG CHECK & AUTOMOBILE REPAIR
Year:	2011
Address:	715 E MILL ST
Name:	H & R SMOG CHECK & AUTO REPR
Year:	2012
Address:	715 E MILL ST

B8 South < 1/8 0.088 mi. 465 ft. | **H&R SMOG CHECK & AUTO**
715 E MILL ST
SAN BERNARDINO, CA 92408 | **EMI** | **S104252177**
San Bern. Co. Permit | **N/A**

Site 2 of 2 in cluster B

Relative: Lower

Actual: 1039 ft.

EMI:

Year:	1987
County Code:	36
Air Basin:	SC
Facility ID:	1997
Air District Name:	SC
SIC Code:	7538
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0003675
Owner:	H&R SMOG CHECK & AUTO
Permit Number:	PT0009857
Permit Category:	HAZMAT HANDLER 0-10 EMPLOYEES
Facility Status:	INACTIVE
Expiration Date:	01/31/2012

Region:	SAN BERNARDINO
Facility ID:	FA0003675
Owner:	H&R SMOG CHECK & AUTO
Permit Number:	PT0009856
Permit Category:	CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Facility Status:	INACTIVE
Expiration Date:	01/31/2011

C9 WSW < 1/8 0.117 mi. 618 ft. | **HERTZ PENSKE**
363 S DOOLITTLE DR
SAN BERNARDINO, CA 92408 | **RCRA NonGen / NLR** | **1000423705**
CAD981970387

Site 1 of 6 in cluster C

Relative: Lower

Actual: 1032 ft.

RCRA NonGen / NLR:

Date form received by agency:	05/21/1987
Facility name:	HERTZ PENSKE
Facility address:	363 S DOOLITTLE DR SAN BERNARDINO, CA 92408
EPA ID:	CAD981970387
Mailing address:	S DOOLITTLE DR SAN BERNARDINO, CA 92408
Contact:	ENVIRONMENTAL MANAGER
Contact address:	363 S DOOLITTLE DR SAN BERNARDINO, CA 92408
Contact country:	US

HERTZ PENSKE (Continued) **1000423705**

Contact telephone: (714) 885-0741
Contact email: Not reported
EPA Region: 09
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: HERTZ PENSKE
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

C10 **RYDER TRUCK RENTAL** **RCRA-SQG** **1000211867**
WSW **363 SO DOOLTITTLE DR** **FINDS** **CAD982374233**
< 1/8 **SAN BERNARDINO, CA 92408** **HAZNET**
0.117 mi. **ECHO**
618 ft. **Site 2 of 6 in cluster C**

Relative:
Lower

Actual:
1032 ft.

RCRA-SQG:
Date form received by agency: 05/04/1988
Facility name: RYDER TRUCK RENTAL
Facility address: 363 SO DOOLTITTLE DR
SAN BERNARDINO, CA 92408
EPA ID: CAD982374233

RYDER TRUCK RENTAL (Continued) **1000211867**

Mailing address:	SO DOOLTITTLE DR SAN BERNARDINO, CA 92408
Contact:	ENVIRONMENTAL MANAGER
Contact address:	363 SO DOOLTITTLE DR SAN BERNARDINO, CA 92408
Contact country:	US
Contact telephone:	(714) 885-0741
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	PEPSI COLA
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

RYDER TRUCK RENTAL (Continued) **1000211867**

FINDS:

Registry ID: 110002803538

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

envid:	1000211867
Year:	1999
GEPAID:	CAD982374233
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	363 SO DOOLTITTLE DR
Mailing City,St,Zip:	SAN BERNARDINO, CA 924080000
Gen County:	Not reported
TSD EPA ID:	CAT080025711
TSD County:	Not reported
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Transfer Station
Tons:	.2919
Cat Decode:	Aqueous solution with total organic residues less than 10 percent
Method Decode:	Transfer Station
Facility County:	San Bernardino

ECHO:

Envid:	1000211867
Registry ID:	110002803538
DFR URL:	http://echo.epa.gov/detailed_facility_report?fid=110002803538

C11 **PEPSI COLA** **SWEEPS UST** **S101591111**
WSW **363 S DOOLITTLE ST** **CA FID UST** **N/A**
< 1/8 **SAN BERNARDINO, CA 92410**
0.117 mi.
618 ft. **Site 3 of 6 in cluster C**

Relative:
Lower

Actual:
1032 ft.

SWEEPS UST:

Status:	Active
Comp Number:	68606
Number:	1
Board Of Equalization:	44-010754
Referral Date:	09-11-91
Action Date:	09-11-91
Created Date:	02-29-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	Not reported
Tank Status:	Not reported
Capacity:	Not reported
Active Date:	Not reported

PEPSI COLA (Continued) **S101591111**

Tank Use: Not reported
STG: Not reported
Content: Not reported
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 68606
Number: Not reported
Board Of Equalization: 44-010754
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-068606-000001
Tank Status: Not reported
Capacity: 550
Active Date: Not reported
Tank Use: OIL
STG: WASTE
Content: WASTE OIL
Number Of Tanks: 2

Status: Not reported
Comp Number: 68606
Number: Not reported
Board Of Equalization: 44-010754
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-068606-000002
Tank Status: Not reported
Capacity: 10000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: DIESEL
Number Of Tanks: Not reported

CA FID UST:
Facility ID: 36001565
Regulated By: UTNKA
Regulated ID: 00068606
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 7148850741
Mail To: Not reported
Mailing Address: 6261 CABALLERO
Mailing Address 2: Not reported
Mailing City,St,Zip: SAN BERNARDINO 92410
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

C12 WSW < 1/8 0.117 mi. 618 ft. | **PEPSI -COLA BOTTLING GROUP/TORR**
363 SOUTH DOOLITTLE
SAN BERNARDINO, CA 92048 | **HIST UST HAZNET** | **S112987337 N/A**

Site 4 of 6 in cluster C

Relative: Lower

Actual: 1032 ft.

HIST UST:

File Number:	0002A408
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002A408.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported
Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported

Click here for Geo Tracker PDF:

HAZNET:

envid:	S112987337
Year:	2011
GEPAID:	CAC002668037
Contact:	JAMES TAYLOR
Telephone:	9098411355
Mailing Name:	Not reported
Mailing Address:	363 S DOOLITTLE AVE
Mailing City,St,Zip:	SAN BERNARDINO, CA 924081623
Gen County:	Not reported
TSD EPA ID:	CAD028409019
TSD County:	Not reported
Waste Category:	Waste oil and mixed oil
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.684
Cat Decode:	Waste oil and mixed oil
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	San Bernardino
envid:	S112987337
Year:	2011
GEPAID:	CAC002668037
Contact:	JAMES TAYLOR
Telephone:	9098411355
Mailing Name:	Not reported
Mailing Address:	363 S DOOLITTLE AVE

PEPSI -COLA BOTTLING GROUP/TORR (Continued) **S112987337**

Mailing City,St,Zip:	SAN BERNARDINO, CA 924081623
Gen County:	Not reported
TSD EPA ID:	CAD028409019
TSD County:	Not reported
Waste Category:	Alkaline solution without metals pH >= 12.5
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.06255
Cat Decode:	Alkaline solution without metals pH >= 12.5
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	San Bernardino

C13
WSW
< 1/8
0.117 mi.
618 ft.

HERTZ PENSKE **RCRA-SQG** **1000380730**
363 S DOOLITTLE DR **FINDS** **CAD981162365**
SAN BERNARDINO, CA 92408 **ECHO**

Site 5 of 6 in cluster C

Relative:
Lower

Actual:
1032 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	LEASEWAY WEST, INC
Facility address:	363 S DOOLITTLE DR SAN BERNARDINO, CA 92408
EPA ID:	CAD981162365
Mailing address:	P O BOX 4305 CARSON, CA 90749
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	PEPSI COLA BOTTLING GROUP
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212

HERTZ PENSKE (Continued) **1000380730**

Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 11/06/1985
Site name: LEASEWAY WEST, INC
Classification: Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002679049

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Registry ID: 110009540611

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

ECHO:
Envid: 1000380730
Registry ID: 110009540611
DFR URL: http://echo.epa.gov/detailed_facility_report?fid=110009540611

HERTZ PENSKE (Continued) **1000380730**

Envid: 1000380730
Registry ID: 110002679049
DFR URL: http://echo.epa.gov/detailed_facility_report?fid=110002679049

C14 WSW < 1/8 0.117 mi. 618 ft. **THE SALVATION ARMY** **San Bern. Co. Permit** **S112274129**
363 S DOOLITTLE ST **N/A**
SAN BERNARDINO, CA 92408

Site 6 of 6 in cluster C

Relative: Lower

Actual: 1032 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0014839
Owner: THE SALVATION ARMY
Permit Number: PT0025847
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: INACTIVE
Expiration Date: 12/31/2016

Region: SAN BERNARDINO
Facility ID: FA0014839
Owner: THE SALVATION ARMY
Permit Number: PT0026144
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR
Facility Status: INACTIVE
Expiration Date: 12/31/2016

D15 SW 1/8-1/4 0.159 mi. 839 ft. **MILL ST BODY AND FRAME** **SWEEPS UST** **S101591236**
595 E MILL ST **CA FID UST** **N/A**
SAN BERNARDINO, CA 92410

Site 1 of 5 in cluster D

Relative: Lower

Actual: 1032 ft.

SWEEPS UST:
Status: Active
Comp Number: 7574
Number: 9
Board Of Equalization: 44-020008
Referral Date: 03-24-92
Action Date: 03-24-92
Created Date: 09-09-88
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-007574-000001
Tank Status: A
Capacity: 1
Active Date: 09-09-88
Tank Use: UNKNOWN
STG: P
Content: UNKNOWN
Number Of Tanks: 1

CA FID UST:
Facility ID: 36002866
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported

MILL ST BODY AND FRAME (Continued) **S101591236**

SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	563 W 36TH ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	SAN BERNARDINO 92410
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

D16 **D & T AUTO REPAIR** **San Bern. Co. Permit** **S108214006**
SW **595 E MILL ST** **N/A**
1/8-1/4 **SAN BERNARDINO, CA 92408**
0.159 mi.
839 ft. **Site 2 of 5 in cluster D**

Relative:
Lower

Actual:
1032 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0002603
Owner:	NGUYEN, THANH
Permit Number:	PT0006752
Permit Category:	SPECIAL GENERATOR
Facility Status:	INACTIVE
Expiration Date:	10/31/2001

D17 **MILL ST BODY/PAINT/FRAME** **San Bern. Co. Permit** **S109429102**
SW **595 E MILL ST STE A** **N/A**
1/8-1/4 **SAN BERNARDINO, CA 92408**
0.159 mi.
839 ft. **Site 3 of 5 in cluster D**

Relative:
Lower

Actual:
1032 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0004730
Owner:	NGUYEN, LE THI
Permit Number:	PT0007149
Permit Category:	SPECIAL HANDLER
Facility Status:	INACTIVE
Expiration Date:	11/30/2004

Region:	SAN BERNARDINO
Facility ID:	FA0004730
Owner:	NGUYEN, LE THI
Permit Number:	PT0007148
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status:	INACTIVE
Expiration Date:	11/30/2014

D18 SW 1/8-1/4 0.159 mi. 839 ft. — **N & N AUTO REPAIR**, **595 E MILL ST STE B**, **SAN BERNARDINO, CA 92408** — **San Bern. Co. Permit** — **S106911458** / **N/A**

Site 4 of 5 in cluster D

Relative: Lower

Actual: 1032 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0009839
Owner:	HUYNH, NIKKY
Permit Number:	PT0016721
Permit Category:	HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	05/31/2011

Region:	SAN BERNARDINO
Facility ID:	FA0009839
Owner:	HUYNH, NIKKY
Permit Number:	PT0016722
Permit Category:	SMALL QUANTITY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	05/31/2015

D19 SW 1/8-1/4 0.179 mi. 947 ft. — **JIMBO'S AUTO WRECKING**, **527 E MILL ST**, **SAN BERNARDINO, CA 92408** — **San Bern. Co. Permit** **WDS** — **S104577095** / **N/A**

Site 5 of 5 in cluster D

Relative: Lower

Actual: 1031 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0004138
Owner:	CUTTER, JAMES A.
Permit Number:	PT0003043
Permit Category:	HAZARDOUS WASTE GENERATOR - 0-10 EMPLOYEES
Facility Status:	INACTIVE
Expiration Date:	09/30/2009

Region:	SAN BERNARDINO
Facility ID:	FA0004138
Owner:	CUTTER, JAMES A.
Permit Number:	PT0003042
Permit Category:	HAZMAT HANDLER 0-10 EMPLOYEES (W/GEN PRMT)
Facility Status:	INACTIVE
Expiration Date:	09/30/2009

Region:	SAN BERNARDINO
Facility ID:	FA0012790
Owner:	PRICE, CHARLEY
Permit Number:	PT0022346
Permit Category:	SPECIAL HANDLER
Facility Status:	INACTIVE
Expiration Date:	10/31/2010

Region:	SAN BERNARDINO
Facility ID:	FA0012790
Owner:	PRICE, CHARLEY
Permit Number:	PT0022347
Permit Category:	SPECIAL GENERATOR
Facility Status:	INACTIVE

JIMBO'S AUTO WRECKING (Continued) **S104577095**

Expiration Date: 10/31/2010

Region: SAN BERNARDINO
Facility ID: FA0014584
Owner: HERNANDEZ, JOSE MANUEL
Permit Number: PT0025477
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status: ACTIVE
Expiration Date: 05/31/2017

WDS:
Facility ID: Santa Ana River 36I010667
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number: CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion: 8
Facility Telephone: Not reported
Facility Contact: NITA
Agency Name: CUTTER JAMES
Agency Address: 527 E Mill St
Agency City,St,Zip: San Bernardino 924081607
Agency Contact: Not reported
Agency Telephone: 9098850748
Agency Type: Private
SIC Code: 0
SIC Code 2: Not reported
Primary Waste Type: Not reported
Primary Waste: Not reported
Waste Type2: Not reported
Waste2: Not reported
Primary Waste Type: Not reported
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Design Flow: 0
Baseline Flow: 0
Reclamation: Not reported
POTW: Not reported
Treat To Water: Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

E20 North 1/8-1/4 0.184 mi. 972 ft. | **SAN BERN. CO., FAC MANAGEMENT**
200 S LENA RD
SAN BERNARDINO, CA 92415

EMI **S103986222**
San Bern. Co. Permit **N/A**

Site 1 of 2 in cluster E

Relative: Lower

Actual: 1039 ft.

EMI:

Year:	1987
County Code:	36
Air Basin:	SC
Facility ID:	41065
Air District Name:	SC
SIC Code:	5511
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	6
Reactive Organic Gases Tons/Yr:	6
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1990
County Code:	36
Air Basin:	SC
Facility ID:	41065
Air District Name:	SC
SIC Code:	9199
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0002289
Owner:	SB COUNTY FACILITIES MANAGEMENT
Permit Number:	PT0004196
Permit Category:	HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	08/31/2016

Region:	SAN BERNARDINO
Facility ID:	FA0002289
Owner:	SB COUNTY FACILITIES MANAGEMENT
Permit Number:	PT0004197
Permit Category:	SMALL QUANTITY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	08/31/2016

Region: SAN BERNARDINO

SAN BERN. CO., FAC MANAGEMENT (Continued) **S103986222**

Facility ID: FA0002289
Owner: SB COUNTY FACILITIES MANAGEMENT
Permit Number: PT0025070
Permit Category: UW HANDLER W/ ANOTHER HAZ WASTE GENERATOR FEE
Facility Status: ACTIVE
Expiration Date: 08/31/2016

Region: SAN BERNARDINO
Facility ID: FA0002382
Owner: S.B.CO. FLEET MGMT. DEPT
Permit Number: PT0006860
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR
Facility Status: ACTIVE
Expiration Date: 09/30/2016

Region: SAN BERNARDINO
Facility ID: FA0002382
Owner: S.B.CO. FLEET MGMT. DEPT
Permit Number: PT0006859
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 09/30/2016

E21
North
1/8-1/4
0.190 mi.
1001 ft.

SAN BERNARDINO COUNTY SHERIFF/CORONER **San Bern. Co. Permit** **S102041765**
175 S LENA RD **N/A**
SAN BERNARDINO, CA 92415

Site 2 of 2 in cluster E

Relative:
Lower

Actual:
1039 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0014322
Owner: SAN BERNARDINO CO. SHERIFF
Permit Number: PT0025179
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS SPECIAL
Facility Status: ACTIVE
Expiration Date: 04/30/2017

F22
SW
1/8-1/4
0.224 mi.
1183 ft.

DOWNTOWN AUTO WRECKING **San Bern. Co. Permit** **S102041839**
519 E MILL ST **N/A**
SAN BERNARDINO, CA 92408

Site 1 of 3 in cluster F

Relative:
Lower

Actual:
1028 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0002789
Owner: REICH, STEVE ET AL
Permit Number: PT0003066
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: INACTIVE
Expiration Date: 11/30/2006

Region: SAN BERNARDINO
Facility ID: FA0002789
Owner: REICH, STEVE ET AL

DOWNTOWN AUTO WRECKING (Continued) **S102041839**

Permit Number: PT0029121
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: INACTIVE
Expiration Date: 11/30/2014

23
SSE
1/8-1/4
0.224 mi.
1184 ft.

GLYCO ENVIRONMENTAL SERVICES **HWT** **S110326724**
892 E SANTA FE ST **San Bern. Co. Permit** **N/A**
SAN BERNARDINO, CA 92408

Relative:
Higher

Actual:
1052 ft.

HWT:
Reg Num: 5440
Expiration Date: 11/30/2016

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0013217
Owner: QUINTERO, LUCIANO
Permit Number: PT0023282
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS SPECIAL
Facility Status: ACTIVE
Expiration Date: 05/31/2017

F24
WSW
1/8-1/4
0.224 mi.
1185 ft.

SCE-SAN BERNARDINO DISTRIBUTION CENTER #1 **San Bern. Co. Permit** **S110496939**
570 E MILL ST **N/A**
SAN BERNARDINO, CA 92408

Site 2 of 3 in cluster F

Relative:
Lower

Actual:
1028 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0013017
Owner: Burlington Stores
Permit Number: PT0022856
Permit Category: EPCRA FACILITY
Facility Status: INACTIVE
Expiration Date: 02/28/2014

Region: SAN BERNARDINO
Facility ID: FA0013017
Owner: Burlington Stores
Permit Number: PT0026175
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR
Facility Status: ACTIVE
Expiration Date: 02/28/2017

Region: SAN BERNARDINO
Facility ID: FA0013017
Owner: Burlington Stores
Permit Number: PT0022855
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 02/28/2017

Region: SAN BERNARDINO

SCE-SAN BERNARDINO DISTRIBUTION CENTER #1 (Continued) **S110496939**

Facility ID: FA0014428
Owner: Southern California Edison
Permit Number: PT0025467
Permit Category: APSA CONDITIONALLY EXEMPT
Facility Status: ACTIVE
Expiration Date: 05/31/2017

Region: SAN BERNARDINO
Facility ID: FA0014428
Owner: Southern California Edison
Permit Number: PT0025330
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS SPECIAL
Facility Status: ACTIVE
Expiration Date: 05/31/2017

F25
WSW
1/8-1/4
0.224 mi.
1185 ft.

COTT BEVERAGES **San Bern. Co. Permit** **S109598530**
570 E MILL ST UNIT B **N/A**
SAN BERNARDINO, CA 92408

Site 3 of 3 in cluster F

Relative:
Lower

Actual:
1028 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0010140
Owner: COTT BEVERAGES USA
Permit Number: PT0017316
Permit Category: HAZARDOUS MATERIALS 11-30 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 01/31/2017

26
SE
1/8-1/4
0.225 mi.
1186 ft.

MEDLINE INDUSTRIES **HAZNET** **S110168998**
1089 E MILL ST **San Bern. Co. Permit** **N/A**
SAN BERNARDINO, CA 92408

Relative:
Higher

Actual:
1052 ft.

HAZNET:
envid: S110168998
Year: 2014
GEPAID: CAL000385762
Contact: DON SUTPHIN
Telephone: 9098210245
Mailing Name: Not reported
Mailing Address: 1089 E MILL ST
Mailing City,St,Zip: SAN BERNARDINO, CA 924081600
Gen County: San Bernardino
TSD EPA ID: UTD981552177
TSD County: 99
Waste Category: Laboratory waste chemicals
Disposal Method: Incineration--Thermal Destruction Other Than Use As A Fuel
Tons: 0.265
Cat Decode: Laboratory waste chemicals
Method Decode: Incineration--Thermal Destruction Other Than Use As A Fuel
Facility County: San Bernardino

envid: S110168998

MEDLINE INDUSTRIES (Continued) **S110168998**

Year:	2014
GEPAID:	CAL000385762
Contact:	DON SUTPHIN
Telephone:	9098210245
Mailing Name:	Not reported
Mailing Address:	1089 E MILL ST
Mailing City,St,Zip:	SAN BERNARDINO, CA 924081600
Gen County:	San Bernardino
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Laboratory waste chemicals
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.499
Cat Decode:	Laboratory waste chemicals
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	San Bernardino

envid:	S110168998
Year:	2014
GEPAID:	CAL000385762
Contact:	DON SUTPHIN
Telephone:	9098210245
Mailing Name:	Not reported
Mailing Address:	1089 E MILL ST
Mailing City,St,Zip:	SAN BERNARDINO, CA 924081600
Gen County:	San Bernardino
TSD EPA ID:	ARD069748192
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.045
Cat Decode:	Not reported
Method Decode:	Incineration--Thermal Destruction Other Than Use As A Fuel
Facility County:	San Bernardino

envid:	S110168998
Year:	2013
GEPAID:	CAL000385762
Contact:	DON SUTPHIN
Telephone:	9098210245
Mailing Name:	Not reported
Mailing Address:	1089 E MILL ST
Mailing City,St,Zip:	SAN BERNARDINO, CA 924081600
Gen County:	San Bernardino
TSD EPA ID:	ARD069748192
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.025
Cat Decode:	Not reported
Method Decode:	Incineration--Thermal Destruction Other Than Use As A Fuel
Facility County:	Not reported

envid:	S110168998
Year:	2013

MEDLINE INDUSTRIES (Continued) **S110168998**

GEPAID: CAL000385762
Contact: DON SUTPHIN
Telephone: 9098210245
Mailing Name: Not reported
Mailing Address: 1089 E MILL ST
Mailing City,St,Zip: SAN BERNARDINO, CA 924081600
Gen County: San Bernardino
TSD EPA ID: CAD044429835
TSD County: Los Angeles
Waste Category: Not reported
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.3375
Cat Decode: Not reported
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: Not reported

Click this hyperlink while viewing on your computer to access
5 additional CA_HAZNET: record(s) in the EDR Site Report.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0013029
Owner: MEDLINE INDUSTRIES INC
Permit Number: PT0035847
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 02/28/2017

Region: SAN BERNARDINO
Facility ID: FA0013029
Owner: MEDLINE INDUSTRIES INC
Permit Number: PT0022893
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 02/28/2017

Region: SAN BERNARDINO
Facility ID: FA0013029
Owner: MEDLINE INDUSTRIES INC
Permit Number: PT0026156
Permit Category: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Facility Status: INACTIVE
Expiration Date: 02/28/2014

Region: SAN BERNARDINO
Facility ID: FA0013029
Owner: MEDLINE INDUSTRIES INC
Permit Number: PT0022894
Permit Category: EPCRA FACILITY
Facility Status: INACTIVE
Expiration Date: 02/28/2014

G27 SW 1/8-1/4 0.232 mi. 1227 ft. | **CURRANS RUBBISH DISPOSAL INC** | **HIST UST** | **U001576039** / **N/A**

549 SAN JACINTO ST
SANTA BARBARA, CA 92408

Site 1 of 3 in cluster G

Relative: Lower
Actual: 1031 ft.

HIST UST:

File Number:	0002C646
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002C646.pdf
Region:	STATE
Facility ID:	00000032855
Facility Type:	Other
Other Type:	RUBBISH DISPOSAL
Contact Name:	BILL CURRAN
Telephone:	8849944
Owner Name:	CURRANS RUBBISH DISPOSAL INC
Owner Address:	549 SAN JACINTO ST.
Owner City,St,Zip:	SANTA BARBARA, CA 92408
Total Tanks:	0001
Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	None

Click here for Geo Tracker PDF:

G28 SW 1/8-1/4 0.232 mi. 1227 ft. | **CURRAN RUBBISH DISPOSAL** | **LUST** / **HIST CORTESE** | **S104758211** / **N/A**

549 SAN JACINTO ST
SAN BERNARDINO, CA 92408

Site 2 of 3 in cluster G

Relative: Lower
Actual: 1031 ft.

LUST REG 8:

Region:	8
County:	San Bernardino
Regional Board:	Santa Ana Region
Facility Status:	Case Closed
Case Number:	083603068T
Local Case Num:	97058
Case Type:	Soil only
Substance:	Diesel
Qty Leaked:	Not reported
Abate Method:	Not reported
Cross Street:	VALLEY VIEW
Enf Type:	CLOS
Funding:	Not reported
How Discovered:	Not reported
How Stopped:	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
Global ID:	T0607100458
How Stopped Date:	Not reported
Enter Date:	9/19/1997
Date Confirmation of Leak Began:	8/19/1997
Date Preliminary Assessment Began:	Not reported

CURRAN RUBBISH DISPOSAL (Continued) **S104758211**

Discover Date:	8/19/1997
Enforcement Date:	Not reported
Close Date:	7/1/1998
Date Prelim Assessment Workplan Submitted:	Not reported
Date Pollution Characterization Began:	Not reported
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	9/19/1997
GW Qualifies:	Not reported
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	34.0910363
Longitude:	-117.2728946
MTBE Date:	Not reported
Max MTBE GW:	Not reported
MTBE Concentration:	0
Max MTBE Soil:	Not reported
MTBE Fuel:	0
MTBE Tested:	Not Required to be Tested.
MTBE Class:	*
Staff:	VJJ
Staff Initials:	JC3
Lead Agency:	Local Agency
Local Agency:	36000L
Hydr Basin #:	UPPER SANTA ANA VALL
Beneficial:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported

Summary: Not reported

HIST CORTESE:

Region:	CORTESE
Facility County Code:	36
Reg By:	LTNKA
Reg Id:	083603068T

G29
SW
1/8-1/4
0.232 mi.
1227 ft.

CURRAN RUBBISH DISPOSAL
549 E SAN JACINTO ST
SAN BERNARDINO, CA 92408

LUST **S109285058**
N/A

Site 3 of 3 in cluster G

Relative:
Lower

Actual:
1031 ft.

LUST:

Region:	STATE
Global Id:	T0607100458
Latitude:	34.0911293
Longitude:	-117.2724513
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	07/01/1998
Lead Agency:	SAN BERNARDINO COUNTY
Case Worker:	JC

CURRAN RUBBISH DISPOSAL (Continued) **S109285058**

Local Agency: SAN BERNARDINO COUNTY
RB Case Number: 083603068T
LOC Case Number: 97058
File Location: Local Agency
Potential Media Affect: Soil
Potential Contaminants of Concern: Diesel
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0607100458
Contact Type: Local Agency Caseworker
Contact Name: JACKSON CRUTSINGER
Organization Name: SAN BERNARDINO COUNTY
Address: 620 SOUTH E STREET
City: SAN BERNARDINO
Email: jcrutsinger@sbcfire.org
Phone Number: Not reported

Global Id: T0607100458
Contact Type: Regional Board Caseworker
Contact Name: VALERIE JAHN-BULL
Organization Name: SANTA ANA RWQCB (REGION 8)
Address: 3737 MAIN STREET, SUITE 500
City: RIVERSIDE
Email: vjahn-bull@waterboards.ca.gov
Phone Number: 9517824903

Status History:
Global Id: T0607100458
Status: Completed - Case Closed
Status Date: 07/01/1998

Global Id: T0607100458
Status: Open - Case Begin Date
Status Date: 09/08/1987

Global Id: T0607100458
Status: Open - Site Assessment
Status Date: 08/19/1997

Regulatory Activities:
Global Id: T0607100458
Action Type: Other
Date: 08/19/1997
Action: Leak Discovery

Global Id: T0607100458
Action Type: Other
Date: 09/11/1997
Action: Leak Reported

Global Id: T0607100458
Action Type: ENFORCEMENT
Date: 07/01/1998
Action: Closure/No Further Action Letter

H30 North 1/4-1/2 0.309 mi. 1632 ft. | **SAN BERNARDINO COUNTY DOHS**
777 E RIALTO AVE
SAN BERNARDINO, CA 92415

Site 1 of 4 in cluster H

RCRA-TSDF
RCRA NonGen / NLR
FINDS
ECHO

1000104712
CAD000775668

Relative: Higher

Actual: 1048 ft.

RCRA-TSDF:

Date form received by agency:	10/14/1993
Facility name:	SAN BERNARDINO COUNTY DOHS
Facility address:	777 E RIALTO AVE SAN BERNARDINO, CA 92415
EPA ID:	CAD000775668
Mailing address:	385 NORTH ARROWHEAD SAN BERNARDINO, CA 92415
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	TSDF
Description:	Handler is engaged in the treatment, storage or disposal of hazardous waste
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	SAN BERNARDINO COUNTY DEPT. OF AGRICULTU
Owner/operator address:	777 EAST RIALTO BLVD SAN BERNARDINO, CA 92415
Owner/operator country:	Not reported
Owner/operator telephone:	(714) 383-1618
Legal status:	County
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	SAN BERNARDINO COUNTY DEPT. OF AGRICULTU
Owner/operator address:	777 EAST RIALTO BLVD CITY NOT REPORTED, CA 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(714) 383-1618
Legal status:	County
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

SAN BERNARDINO COUNTY DOHS (Continued) **1000104712**

Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 08/27/1980
Site name: SAN BERNARDINO COUNTY DOHS
Classification: Small Quantity Generator

Corrective Action Summary:
Event date: 01/01/1990
Event: CA029ST

Facility Has Received Notices of Violations:
Regulation violated: F - 264.110-120.G
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 11/30/1992
Date achieved compliance: 04/19/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/15/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 11/30/1992
Date achieved compliance: 04/19/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/15/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 270
Area of violation: TSD - General
Date violation determined: 11/30/1992
Date achieved compliance: 04/19/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/15/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State

SAN BERNARDINO COUNTY DOHS (Continued) **1000104712**

Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 264.140-150.H
Area of violation: TSD - Financial Requirements
Date violation determined: 11/30/1992
Date achieved compliance: 04/19/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/15/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 264.50-56.D
Area of violation: TSD - General
Date violation determined: 11/30/1992
Date achieved compliance: 04/19/1993
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/15/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.50-60
Area of violation: Generators - General
Date violation determined: 06/30/1988
Date achieved compliance: 06/03/1992
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.50-60
Area of violation: Generators - General
Date violation determined: 09/23/1987
Date achieved compliance: 06/30/1988
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported

SAN BERNARDINO COUNTY DOHS (Continued) **1000104712**

Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 09/22/1986
Date achieved compliance: 09/23/1987
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 09/18/1985
Date achieved compliance: 09/22/1986
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 09/28/1984
Date achieved compliance: 01/03/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 06/03/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 04/19/1993
Evaluation lead agency: State

Evaluation date: 06/03/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Financial Requirements
Date achieved compliance: 04/19/1993
Evaluation lead agency: State

SAN BERNARDINO COUNTY DOHS (Continued) **1000104712**

Evaluation date: 06/03/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Closure/Post-Closure
Date achieved compliance: 04/19/1993
Evaluation lead agency: State

Evaluation date: 06/30/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 06/03/1992
Evaluation lead agency: EPA

Evaluation date: 09/23/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 06/30/1988
Evaluation lead agency: EPA

Evaluation date: 09/22/1986
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 09/23/1987
Evaluation lead agency: EPA

Evaluation date: 09/18/1985
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 09/22/1986
Evaluation lead agency: EPA

Evaluation date: 09/17/1985
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/17/1985
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/01/1985
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/01/1985
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/28/1984
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: Generators - General

SAN BERNARDINO COUNTY DOHS (Continued) **1000104712**

Date achieved compliance: 01/03/1992
Evaluation lead agency: State

FINDS:

Registry ID: 110002628817

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

SSTS (Section Seven Tracking System) evolved from the FIFRA and TSCA Enforcement System (FATES). SSTS tracks the registration of all pesticide-producing establishments and tracks annually the types and amounts of pesticides, active ingredients, and related devices that are produced, sold, or distributed each year.

ECHO:
Envid: 1000104712
Registry ID: 110002628817
DFR URL: http://echo.epa.gov/detailed_facility_report?fid=110002628817

H31 **SAN BERNARDINO CO DEPART OF AGRICULTURE** **ENVIROSTOR** **S118757510**
North **777 E RIALTO AVE** **N/A**
1/4-1/2 **SAN BERNARDINO, CA 92415**
0.309 mi.
1632 ft. **Site 2 of 4 in cluster H**

Relative:
Higher

Actual:
1048 ft.

ENVIROSTOR:

Facility ID:	80001338
Status:	No Action Required
Status Date:	06/19/2013
Site Code:	Not reported
Site Type:	Corrective Action
Site Type Detailed:	Corrective Action
Acres:	1
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	WM
Program Manager:	Not reported
Supervisor:	* Unknown
Division Branch:	Cleanup Cypress
Assembly:	40
Senate:	23
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	34.10142
Longitude:	-117.2673
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED

SAN BERNARDINO CO DEPART OF AGRICULTURE (Continued) **S118757510**

Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CAD000775668
Alias Type: EPA Identification Number
Alias Name: 110002628817
Alias Type: EPA (FRS #)
Alias Name: 80001338
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 01/20/2010
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

H32 **GSA** **LUST** **U001576243**
North **777 E RIALTO AVE** **HIST UST** **N/A**
1/4-1/2 **SAN BERNARDINO, CA 92415** **San Bern. Co. Permit**
0.309 mi.
1632 ft. **Site 3 of 4 in cluster H**

Relative:
Higher

Actual:
1048 ft.

LUST:
Region: STATE
Global Id: T0607100588
Latitude: 34.100509
Longitude: -117.270974
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 03/22/1999
Lead Agency: SAN BERNARDINO COUNTY
Case Worker: CB
Local Agency: SAN BERNARDINO COUNTY
RB Case Number: 083603507T
LOC Case Number: 99081
File Location: Local Agency
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0607100588
Contact Type: Local Agency Caseworker
Contact Name: CURTIS BRUNDAGE
Organization Name: SAN BERNARDINO COUNTY
Address: 620 S. E STREET
City: SAN BERNARDINO

GSA (Continued) **U001576243**

Email: cbrundage@sbcfire.org
Phone Number: Not reported

Global Id: T0607100588
Contact Type: Regional Board Caseworker
Contact Name: VALERIE JAHN-BULL
Organization Name: SANTA ANA RWQCB (REGION 8)
Address: 3737 MAIN STREET, SUITE 500
City: RIVERSIDE
Email: vjahn-bull@waterboards.ca.gov
Phone Number: 9517824903

Status History:
Global Id: T0607100588
Status: Completed - Case Closed
Status Date: 03/22/1999

Global Id: T0607100588
Status: Open - Case Begin Date
Status Date: 01/06/1999

Global Id: T0607100588
Status: Open - Site Assessment
Status Date: 01/06/1999

Global Id: T0607100588
Status: Open - Site Assessment
Status Date: 03/15/1999

Regulatory Activities:
Global Id: T0607100588
Action Type: ENFORCEMENT
Date: 03/22/1999
Action: Closure/No Further Action Letter

Global Id: T0607100588
Action Type: Other
Date: 03/15/1999
Action: Leak Discovery

Global Id: T0607100588
Action Type: Other
Date: 05/25/1999
Action: Leak Reported

Global Id: T0607100588
Action Type: ENFORCEMENT
Date: 02/10/2000
Action: LOP Case Closure Summary to RB

HIST UST:
File Number: 00029F67
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00029F67.pdf
Region: STATE
Facility ID: 00000015791

GSA (Continued) **U001576243**

Facility Type:	Other
Other Type:	OFFICE
Contact Name:	MARIO LABANI
Telephone:	7143831711
Owner Name:	GSA-FACILITIES MANAGEMENT-MAIN
Owner Address:	200 S. LENA
Owner City,St,Zip:	SAN BERNARDINO, CA 92415
Total Tanks:	0001

Tank Num:	001
Container Num:	1
Year Installed:	1977
Tank Capacity:	00000100
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor

Click here for Geo Tracker PDF:

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0002376
Owner:	S B COUNTY AGRIC COMM
Permit Number:	PT0001774
Permit Category:	HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	05/31/2016

Region:	SAN BERNARDINO
Facility ID:	FA0002376
Owner:	S B COUNTY AGRIC COMM
Permit Number:	PT0024256
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	05/31/2016

Region:	SAN BERNARDINO
Facility ID:	FA0002378
Owner:	CO-SB MICROFILM
Permit Number:	PT0006817
Permit Category:	CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Facility Status:	INACTIVE
Expiration Date:	11/30/2002

H33 **GENERAL SERVICES AGENCY** **LUST** **S104758450**
North **777 RIALTO AVE** **HIST CORTESE** **N/A**
1/4-1/2 **SAN BERNARDINO, CA 92415**
0.319 mi.
1685 ft. **Site 4 of 4 in cluster H**

Relative:
Higher

Actual:
1049 ft.

LUST REG 8:

Region:	8
County:	San Bernardino
Regional Board:	Santa Ana Region
Facility Status:	Case Closed
Case Number:	083603507T

GENERAL SERVICES AGENCY (Continued) **S104758450**

Local Case Num:	99081
Case Type:	Soil only
Substance:	Gasoline
Qty Leaked:	Not reported
Abate Method:	Not reported
Cross Street:	WATERMAN
Enf Type:	CLOS
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Not reported
Leak Cause:	UNK
Leak Source:	UNK
Global ID:	T0607100588
How Stopped Date:	Not reported
Enter Date:	Not reported
Date Confirmation of Leak Began:	1/6/1999
Date Preliminary Assessment Began:	Not reported
Discover Date:	3/15/1999
Enforcement Date:	Not reported
Close Date:	3/22/1999
Date Prelim Assessment Workplan Submitted:	3/15/1999
Date Pollution Characterization Began:	Not reported
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	Not reported
GW Qualifies:	Not reported
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	34.1012469
Longitude:	-117.2688385
MTBE Date:	Not reported
Max MTBE GW:	Not reported
MTBE Concentration:	0
Max MTBE Soil:	Not reported
MTBE Fuel:	1
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
MTBE Class:	*
Staff:	VJJ
Staff Initials:	CB5
Lead Agency:	Local Agency
Local Agency:	36000L
Hydr Basin #:	UPPER SANTA ANA VALL
Beneficial:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported

Summary: Not reported

HIST CORTESE:

Region:	CORTESE
Facility County Code:	30
Reg By:	LTNKA
Reg Id:	083000883T

GENERAL SERVICES AGENCY (Continued) **S104758450**

Region:	CORTESE
Facility County Code:	30
Reg By:	LTNKA
Reg Id:	083000026T

34
NW
1/4-1/2
0.391 mi.
2063 ft.

SAN BERNARDINO CO DEPART OF AGRICULTURE
777 E RIALTO AVE
SAN BERNARDINO, CA 92415

SWEEPS UST **S101591133**
CA FID UST **N/A**
HWP

Relative:
Lower

Actual:
1038 ft.

SWEEPS UST:

Status:	Active
Comp Number:	15791
Number:	9
Board Of Equalization:	44-020628
Referral Date:	03-24-92
Action Date:	03-24-92
Created Date:	02-29-88
Owner Tank Id:	1
SWRCB Tank Id:	36-000-015791-000001
Tank Status:	A
Capacity:	100
Active Date:	07-01-85
Tank Use:	M.V. FUEL
STG:	P
Content:	DIESEL
Number Of Tanks:	1

CA FID UST:

Facility ID:	36001764
Regulated By:	UTNKA
Regulated ID:	00015791
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	777 E RIALTO AVE
Mailing Address 2:	Not reported
Mailing City,St,Zip:	SAN BERNARDINO 92415
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

HWP:

EPA Id:	CAD000775668
Cleanup Status:	PROTECTIVE FILER
Latitude:	34.10142
Longitude:	-117.2673
Facility Type:	Historical - Non-Operating
Facility Size:	Not reported
Team:	Not reported
Supervisor:	Not reported

SAN BERNARDINO CO DEPART OF AGRICULTURE (Continued) **S101591133**

Site Code:	Not reported
Assembly District:	40
Senate District:	23
Public Information Officer:	Not reported
Public Information Officer:	Not reported

Activities:

EPA Id:	CAD000775668
Facility Type:	Historical - Non-Operating
Unit Names:	CONTAIN1
Event Description:	Protective Filer Status - PROTECTIVE FILER (APPROVED)
Actual Date:	01/23/1989

EPA Id:	CAD000775668
Facility Type:	Historical - Non-Operating
Unit Names:	CONTAIN1
Event Description:	Protective Filer Status - PROTECTIVE FILER (RECEIVED)
Actual Date:	07/29/1988

Alias:

EPA Id:	CAD000775668
Facility Type:	Historical - Non-Operating
Alias Type:	FRS
Alias:	110002628817

35
SSW
1/4-1/2
0.448 mi.
2367 ft.

NORTH SAN BERNARDINO AREA
BUNKER HILL GROUNDWATER BASIN
SAN BERNARDINO, CA 92401

RESPONSE **S100184135**
ENVIROSTOR **N/A**

Relative:
Lower

Actual:
1034 ft.

RESPONSE:

Facility ID:	36990001
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	US EPA
Lead Agency Description:	US EPA
Project Manager:	Not reported
Supervisor:	* Greg Holmes
Division Branch:	Cleanup Cypress
Site Code:	400106
Site Mgmt. Req.:	NONE SPECIFIED
Assembly:	40
Senate:	23
Special Program Status:	Not reported
Status:	Refer: Other Agency
Status Date:	09/25/1995
Restricted Use:	NO
Funding:	* Unknown
Latitude:	34.08666
Longitude:	-117.2716
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC :	* HALOGENATED SOLVENTS
Confirmed COC:	NONE SPECIFIED

NORTH SAN BERNARDINO AREA (Continued) **S100184135**

Potential Description: NONE SPECIFIED
Alias Name: BUNKER HILL GROUNDWATER BASIN
Alias Type: Alternate Name
Alias Name: MUSCOY AREA
Alias Type: Alternate Name
Alias Name: NEWMARK
Alias Type: Alternate Name
Alias Name: 110033611937
Alias Type: EPA (FRS #)
Alias Name: P41053
Alias Type: PCode
Alias Name: 400106
Alias Type: Project Code (Site Code)
Alias Name: 36990001
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Unilateral Order (I/SE, RAO, CAO, EPA AO)
Completed Date: 11/30/1986
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedy Constructed: Operating Properly & Successfully
Completed Date: 08/17/1993
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 08/17/1993
Comments: Removal Action (19th Street). An 8.6 million gallon per day capacity granular activitated carbon (GAC) wellhead treat- ment system was constructed on 19th Street in the City of San Bernardino. This GAC System will be operated by the City of San Bernardino Municipal Water Department. The system will function to help stop the migration of a TCE and PCE contaminated groundwater plume and to provide safe water to residents of the City of San Bernardino. The removal was initiated in June 1992 and completed on August 13, 1993 at a cost of approximately $1.9 million.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 08/30/1990
Comments: Removal Action (17&S): 17th & Sierra gw pump/treat online. DTSC and the City of San Bernardino entered into an agree- ment on 10/31/1986, amended on 04/22/1988, to construct three treatment systems: Waterman, Newmark, and 17th & Sierra. The completion date for the removal action is 08/30/1990 when all three systems were online. The Newmark System is described in the Newmark Groundwater Contamination Site (ID# 36990002).

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report

NORTH SAN BERNARDINO AREA (Continued) **S100184135**

Completed Date: 08/30/1989
Comments: Removal Action (WATER): Waterman gw pump/treat online

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: *Site Inspection (SI) Report
Completed Date: 06/26/1989
Comments: Site Inspection Done: Preliminary Assessment/Site Investi- gation prepared by DHS TSCP; ongoing IRM Implementation.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Public Participation Plan / Community Relations Plan
Completed Date: 11/30/1987
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 36990001
Status: Refer: Other Agency
Status Date: 09/25/1995
Site Code: 400106
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: NO
Regulatory Agencies: US EPA
Lead Agency: US EPA
Program Manager: Not reported
Supervisor: * Greg Holmes
Division Branch: Cleanup Cypress
Assembly: 40
Senate: 23
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: * Unknown
Latitude: 34.08666
Longitude: -117.2716
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: * HALOGENATED SOLVENTS
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: BUNKER HILL GROUNDWATER BASIN
Alias Type: Alternate Name
Alias Name: MUSCOY AREA
Alias Type: Alternate Name

NORTH SAN BERNARDINO AREA (Continued) **S100184135**

Alias Name: NEWMARK
Alias Type: Alternate Name
Alias Name: 110033611937
Alias Type: EPA (FRS #)
Alias Name: P41053
Alias Type: PCode
Alias Name: 400106
Alias Type: Project Code (Site Code)
Alias Name: 36990001
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Unilateral Order (I/SE, RAO, CAO, EPA AO)
Completed Date: 11/30/1986
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedy Constructed: Operating Properly & Successfully
Completed Date: 08/17/1993
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 08/17/1993
Comments: Removal Action (19th Street). An 8.6 million gallon per day capacity granular activitated carbon (GAC) wellhead treat- ment system was constructed on 19th Street in the City of San Bernardino. This GAC System will be operated by the City of San Bernardino Municipal Water Department. The system will function to help stop the migration of a TCE and PCE contaminated groundwater plume and to provide safe water to residents of the City of San Bernardino. The removal was initiated in June 1992 and completed on August 13, 1993 at a cost of approximately $1.9 million.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 08/30/1990
Comments: Removal Action (17&S): 17th & Sierra gw pump/treat online. DTSC and the City of San Bernardino entered into an agree- ment on 10/31/1986, amended on 04/22/1988, to construct three treatment systems: Waterman, Newmark, and 17th & Sierra. The completion date for the removal action is 08/30/1990 when all three systems were online. The Newmark System is described in the Newmark Groundwater Contamination Site (ID# 36990002).

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 08/30/1989
Comments: Removal Action (WATER): Waterman gw pump/treat online

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

NORTH SAN BERNARDINO AREA (Continued) **S100184135**

Completed Document Type:	*Site Inspection (SI) Report
Completed Date:	06/26/1989
Comments:	Site Inspection Done: Preliminary Assessment/Site Investi- gation prepared by DHS TSCP; ongoing IRM Implementation.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	11/30/1987
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

I36 **LIBERTY GROVES** **LUST** **S104749441**
WSW **495** **HIST CORTESE** **N/A**
1/4-1/2 **SAN BERNARDINO, CA 92408**
0.483 mi.
2548 ft. **Site 1 of 2 in cluster I**

Relative:
Lower

Actual:
1017 ft.

LUST REG 8:

Region:	8
County:	San Bernardino
Regional Board:	Santa Ana Region
Facility Status:	Pollution Characterization
Case Number:	083603439T
Local Case Num:	99052
Case Type:	Soil only
Substance:	8006619, MTB
Qty Leaked:	Not reported
Abate Method:	Not reported
Cross Street:	MILL
Enf Type:	Not reported
Funding:	Not reported
How Discovered:	OM
How Stopped:	Not reported
Leak Cause:	Spill
Leak Source:	UNK
Global ID:	T0607100569
How Stopped Date:	Not reported
Enter Date:	5/11/1999
Date Confirmation of Leak Began:	Not reported
Date Preliminary Assessment Began:	2/22/1999
Discover Date:	3/2/1999
Enforcement Date:	Not reported
Close Date:	Not reported
Date Prelim Assessment Workplan Submitted:	Not reported
Date Pollution Characterization Began:	3/12/1999
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported

LIBERTY GROVES (Continued) **S104749441**

Enter Date:	5/11/1999
GW Qualifies:	=
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	34.0923532
Longitude:	-117.2788418
MTBE Date:	10/3/2001
Max MTBE GW:	25000
MTBE Concentration:	0
Max MTBE Soil:	Not reported
MTBE Fuel:	0
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class:	*
Staff:	VJJ
Staff Initials:	CB5
Lead Agency:	Local Agency
Local Agency:	36000L
Hydr Basin #:	UPPER SANTA ANA VALL
Beneficial:	MUN
Priority:	A2
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported
Summary:	Not reported

HIST CORTESE:

Region:	CORTESE
Facility County Code:	36
Reg By:	LTNKA
Reg Id:	083600870T

Region:	CORTESE
Facility County Code:	36
Reg By:	LTNKA
Reg Id:	083603439T

I37 **ARCO PETROLEUM PROD #82390** **LUST** **U001576188**
WSW **495 S WATERMAN AVE** **HIST UST** **N/A**
1/4-1/2 **SAN BERNARDINO, CA 92408** **San Bern. Co. Permit**
0.483 mi.
2548 ft. **Site 2 of 2 in cluster I**

Relative:
Lower

Actual:
1017 ft.

LUST:

Region:	STATE
Global Id:	T0607100569
Latitude:	34.0924021121184
Longitude:	-117.279181480408
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	09/15/2009
Lead Agency:	SAN BERNARDINO COUNTY
Case Worker:	CR2
Local Agency:	SAN BERNARDINO COUNTY
RB Case Number:	083603439T
LOC Case Number:	99052

ARCO PETROLEUM PROD #82390 (Continued) **U001576188**

File Location:	Local Agency
Potential Media Affect:	Aquifer used for drinking water supply, Soil, Soil Vapor
Potential Contaminants of Concern:	Gasoline, MTBE / TBA / Other Fuel Oxygenates
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0607100569
Contact Type:	Local Agency Caseworker
Contact Name:	CATHERINE RICHARDS
Organization Name:	SAN BERNARDINO COUNTY
Address:	620 SOUTH E STREET
City:	SAN BERNARDINO
Email:	crichards@sbcfire.org
Phone Number:	9093868419

Global Id:	T0607100569
Contact Type:	Regional Board Caseworker
Contact Name:	VALERIE JAHN-BULL
Organization Name:	SANTA ANA RWQCB (REGION 8)
Address:	3737 MAIN STREET, SUITE 500
City:	RIVERSIDE
Email:	vjahn-bull@waterboards.ca.gov
Phone Number:	9517824903

Status History:

Global Id:	T0607100569
Status:	Completed - Case Closed
Status Date:	09/03/2009

Global Id:	T0607100569
Status:	Completed - Case Closed
Status Date:	09/10/2009

Global Id:	T0607100569
Status:	Completed - Case Closed
Status Date:	09/15/2009

Global Id:	T0607100569
Status:	Open - Case Begin Date
Status Date:	02/22/1999

Global Id:	T0607100569
Status:	Open - Site Assessment
Status Date:	02/22/1999

Global Id:	T0607100569
Status:	Open - Site Assessment
Status Date:	03/12/1999

Regulatory Activities:

Global Id:	T0607100569
Action Type:	Other
Date:	03/02/1999
Action:	Leak Discovery

ARCO PETROLEUM PROD #82390 (Continued) **U001576188**

Global Id:	T0607100569
Action Type:	Other
Date:	03/25/1999
Action:	Leak Reported
Global Id:	T0607100569
Action Type:	RESPONSE
Date:	05/07/2007
Action:	Request for Closure
Global Id:	T0607100569
Action Type:	ENFORCEMENT
Date:	07/09/2009
Action:	Letter - Notice
Global Id:	T0607100569
Action Type:	ENFORCEMENT
Date:	09/03/2009
Action:	Closure/No Further Action Letter

HIST UST:

File Number:	00029986
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00029986.pdf
Region:	STATE
Facility ID:	00000067549
Facility Type:	Gas Station
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	7143814037
Owner Name:	ATLANTIC RICHFIELD COMPANY
Owner Address:	515 SOUTH FLOWER STREET
Owner City,St,Zip:	LOS ANGELES, CA 90071
Total Tanks:	0003
Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00012000
Tank Used for:	WASTE
Type of Fuel:	2
Container Construction Thickness:	X
Leak Detection:	Visual, Stock Inventor, Pressure Test
Tank Num:	002
Container Num:	2
Year Installed:	Not reported
Tank Capacity:	00012000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor, Pressure Test
Tank Num:	003
Container Num:	3
Year Installed:	Not reported
Tank Capacity:	00012000

ARCO PETROLEUM PROD #82390 (Continued) **U001576188**

Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Container Construction Thickness: Not reported
Leak Detection: Visual, Stock Inventor, Pressure Test

Click here for Geo Tracker PDF:

San Bern. Co. Permit:

Region: SAN BERNARDINO
Facility ID: FA0001085
Owner: CROSSROAD PETROLEUM, INC
Permit Number: PT0002925
Permit Category: HAZMAT HANDLER - UST ONLY
Facility Status: ACTIVE
Expiration Date: 10/31/2016

Region: SAN BERNARDINO
Facility ID: FA0001085
Owner: CROSSROAD PETROLEUM, INC
Permit Number: PT0011458
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: ACTIVE
Expiration Date: 10/31/2016

Region: SAN BERNARDINO
Facility ID: FA0001085
Owner: CROSSROAD PETROLEUM, INC
Permit Number: PT0013589
Permit Category: WASTE INCIDENTAL UST OPERATION ONLY
Facility Status: ACTIVE
Expiration Date: 10/31/2016

Region: SAN BERNARDINO
Facility ID: FA0001085
Owner: CROSSROAD PETROLEUM, INC
Permit Number: PT0011460
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: ACTIVE
Expiration Date: 10/31/2016

Region: SAN BERNARDINO
Facility ID: FA0001085
Owner: CROSSROAD PETROLEUM, INC
Permit Number: PT0011459
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: ACTIVE
Expiration Date: 10/31/2016

38 North 1/4-1/2 0.484 mi. 2553 ft.

PHIL'S BURGER & DRUMS
835 E. 3RD STREET
SAN BERNARDINO, CA 92410

SEMS **1005440858**
PRP **CAN000905906**

Relative: Higher

Actual: 1053 ft.

SEMS:

Site ID:	905906
EPA ID:	CAN000905906
Federal Facility:	N
NPL:	Not on the NPL
Non NPL Status:	Removal Only Site (No Site Assessment Work Needed)

Following information was gathered from the prior CERCLIS update completed in 10/2013:

Site ID:	0905906
EPA ID:	CAN000905906
Facility County:	SAN BERNARDINO
Short Name:	PHIL'S BURGER & DRUMS
Congressional District:	Not reported
IFMS ID:	09JB
SMSA Number:	Not reported
USGC Hydro Unit:	Not reported
Federal Facility:	Not a Federal Facility
DMNSN Number:	0.00000
Site Orphan Flag:	Not reported
RCRA ID:	Not reported
USGS Quadrangle:	Not reported
Site Init By Prog:	R
NFRAP Flag:	Not reported
Parent ID:	Not reported
RST Code:	Not reported
EPA Region:	09
Classification:	Not reported
Site Settings Code:	Not reported
NPL Status:	Not on the NPL
DMNSN Unit Code:	Not reported
RBRAC Code:	Not reported
RResp Fed Agency Code:	Not reported
Non NPL Status:	Removal Only Site (No Site Assessment Work Needed)
Non NPL Status Date:	03/25/02
Site Fips Code:	06071
CC Concurrence Date:	/ /
CC Concurrence FY:	Not reported
Alias EPA ID:	Not reported
Site FUDS Flag:	Not reported

CERCLIS Site Contact Name(s):

Contact ID:	9000109.00000
Contact Name:	Richard Martyn
Contact Tel:	(415) 972-3038
Contact Title:	On-Scene Coordinator (OSC)
Contact Email:	Not reported

Contact ID:	13003854.00000
Contact Name:	Leslie Ramirez
Contact Tel:	(415) 972-3978
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported

PHIL'S BURGER & DRUMS (Continued) **1005440858**

Contact ID: 13003858.00000
Contact Name: Sharon Murray
Contact Tel: (415) 972-4250
Contact Title: Site Assessment Manager (SAM)
Contact Email: Not reported

Contact ID: 13004003.00000
Contact Name: Carl Brickner
Contact Tel: Not reported
Contact Title: Site Assessment Manager (SAM)
Contact Email: Not reported

Alias Comments: Not reported
Site Description: Not reported

CERCLIS Assessment History:

Action Code: 001
Action: UNILATERAL ADMIN ORDER
Date Started: / /
Date Completed: 05/10/02
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: Federal Enforcement
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

Action Code: 001
Action: POTENTIALLY RESPONSIBLE PARTY REMOVAL
Date Started: 06/03/02
Date Completed: 06/21/02
Priority Level: Cleaned up
Operable Unit: SITEWIDE
Primary Responsibility: Responsible Party
Planning Status: Approved
Urgency Indicator: Time Critical
Action Anomaly: Not reported

PRP:
PRP name: ANDRIKOPOULOS FAMILY TRUST
FILIPPOS ANDRIKOPOULOS
SPIRAS DEMETRULIAS

J39 **SAN BERNARDINO AAF** **ENVIROSTOR** **S107737217**
ESE **N/A**
1/2-1 **SAN BERNARDINO, CA**
0.557 mi.
2943 ft. **Site 1 of 2 in cluster J**

Relative:
Higher

Actual:
1063 ft.

ENVIROSTOR:
Facility ID: 80000729
Status: Inactive - Needs Evaluation
Status Date: 07/01/2005
Site Code: Not reported
Site Type: Military Evaluation

SAN BERNARDINO AAF (Continued) **S107737217**

Site Type Detailed:	FUDS
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Douglas Bautista
Division Branch:	Cleanup Cypress
Assembly:	40
Senate:	23
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	DERA
Latitude:	34.09166
Longitude:	-117.2583
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	Explosives (UXO, MEC
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	CA99799F805900
Alias Type:	Federal Facility ID
Alias Name:	J09CA7005
Alias Type:	INPR
Alias Name:	80000729
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Inventory Project Report (INPR)
Completed Date:	09/29/1994
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

J40 **NORTON AFB - FUDS** **ENVIROSTOR** **S109348603**
ESE **N/A**
1/2-1 **SAN BERNARDINO, CA**
0.557 mi.
2943 ft. **Site 2 of 2 in cluster J**

Relative:
Higher

Actual:
1063 ft.

ENVIROSTOR:

Facility ID:	80000333
Status:	Inactive - Needs Evaluation
Status Date:	07/01/2005
Site Code:	Not reported
Site Type:	Military Evaluation
Site Type Detailed:	FUDS

NORTON AFB - FUDS (Continued) **S109348603**

Acres:	Not reported
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Douglas Bautista
Division Branch:	Cleanup Cypress
Assembly:	40
Senate:	23
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	DERA
Latitude:	34.09166
Longitude:	-117.2583
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	CA99799F553500
Alias Type:	Federal Facility ID
Alias Name:	J09CA0514
Alias Type:	INPR
Alias Name:	80000333
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Inventory Project Report (INPR)
Completed Date:	09/21/1999
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

---

41 WNW 1/2-1 0.718 mi. 3792 ft.

BURBANK II ELEMENTARY SCHOOL
RIALTO AVENUE/ALLEN STREET
SAN BERNARDINO, CA 92408

ENVIROSTOR SCH **S107735972 N/A**

Relative: Lower

Actual: 1026 ft.

ENVIROSTOR:

Facility ID:	60000046
Status:	Certified
Status Date:	06/29/2012
Site Code:	404552
Site Type:	School Cleanup
Site Type Detailed:	School
Acres:	15

BURBANK II ELEMENTARY SCHOOL (Continued) **S107735972**

NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Rana Georges
Supervisor:	Thomas Cota
Division Branch:	Southern California Schools & Brownfields Outreach
Assembly:	47
Senate:	20
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	School District
Latitude:	34.099
Longitude:	-117.2805
APN:	NONE SPECIFIED
Past Use:	RESIDENTIAL AREA
Potential COC:	Chlordane Lead Dieldrin
Confirmed COC:	Chlordane Lead Dieldrin
Potential Description:	SOIL
Alias Name:	Proposed H. Frank Dominguez Elementary School
Alias Type:	Alternate Name
Alias Name:	SAN BERNARDINO USD-PRPSD BURBANK II ES
Alias Type:	Alternate Name
Alias Name:	404552
Alias Type:	Project Code (Site Code)
Alias Name:	60000046
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	12/22/2005
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	07/22/2004
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	06/29/2012
Comments:	Post removal site certification completed.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	08/02/2012
Comments:	CRU memo issued to close out the project.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	07/18/2011
Comments:	Not reported

BURBANK II ELEMENTARY SCHOOL (Continued) **S107735972**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: School Cleanup Agreement
Completed Date: 04/18/2011
Comments: Fully executed SCA sent (FedEx) to District.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 10/18/2004
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: 4.14 Request
Completed Date: 11/13/2006
Comments: DTSC accepted the 4.14 form. A deliverable of the Addendum will be scheduled to keep the project active until the District is ready to complete the investigation process.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 01/27/2011
Comments: DTSC approved the revised PEA Report with a further action determination.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 07/23/2009
Comments: DTSC issued approval of the TM via email.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 07/16/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 01/28/2011
Comments: Sampling activities completed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 07/18/2011
Comments: DTSC approved the Final Removal Action Workplan for implementation. Three comments were received on the Draft RAW from the public. DTSC responded to the public comments and forwarded the responses to each resident.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Report

BURBANK II ELEMENTARY SCHOOL (Continued) **S107735972**

Completed Date: 04/13/2011
Comments: DTSC approved the SSI Report with further action determination and completion of RAW for the removal of OCP and lead contaminated soils at defined hot spots as presented in the report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Community Profile
Completed Date: 06/01/2011
Comments: Final community profile document attached.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fact Sheets
Completed Date: 05/31/2011
Comments: DTSC submitted approved fact sheet in English and Spanish to District. Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Public Notice
Completed Date: 05/26/2011
Comments: District sent final PN.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 01/22/2012
Comments: Fieldwork completed. Impacted soil excavated, transported offsite, clean fill brought into the site. Site is undergoing restoration.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 06/22/2012
Comments: DTSC approved the site with NFA determination. The approved RAW was followed during remvoal activities and soil was properly disposed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 03/16/2011
Comments: ESI letter forwarded to District.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 01/03/2011
Comments: Agreement given to Shahir for signature; fully executed EOA sent (FedEx) to District.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported

BURBANK II ELEMENTARY SCHOOL (Continued) **S107735972**

Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Facility ID: 60000046
Site Type: School Cleanup
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 15
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Rana Georges
Supervisor: Thomas Cota
Division Branch: Southern California Schools & Brownfields Outreach
Site Code: 404552
Assembly: 47
Senate: 20
Special Program Status: Not reported
Status: Certified
Status Date: 06/29/2012
Restricted Use: NO
Funding: School District
Latitude: 34.099
Longitude: -117.2805
APN: NONE SPECIFIED
Past Use: RESIDENTIAL AREA
Potential COC: Chlordane, Lead, Dieldrin
Confirmed COC: Chlordane, Lead, Dieldrin
Potential Description: SOIL
Alias Name: Proposed H. Frank Dominguez Elementary School
Alias Type: Alternate Name
Alias Name: SAN BERNARDINO USD-PRPSD BURBANK II ES
Alias Type: Alternate Name
Alias Name: 404552
Alias Type: Project Code (Site Code)
Alias Name: 60000046
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 12/22/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 07/22/2004
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

BURBANK II ELEMENTARY SCHOOL (Continued) **S107735972**

Completed Document Type: Certification
Completed Date: 06/29/2012
Comments: Post removal site certification completed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 08/02/2012
Comments: CRU memo issued to close out the project.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Notice of Exemption
Completed Date: 07/18/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: School Cleanup Agreement
Completed Date: 04/18/2011
Comments: Fully executed SCA sent (FedEx) to District.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 10/18/2004
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: 4.14 Request
Completed Date: 11/13/2006
Comments: DTSC accepted the 4.14 form. A deliverable of the Addendum will be scheduled to keep the project active until the District is ready to complete the investigation process.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 01/27/2011
Comments: DTSC approved the revised PEA Report with a further action determination.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 07/23/2009
Comments: DTSC issued approval of the TM via email.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 07/16/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

BURBANK II ELEMENTARY SCHOOL (Continued) **S107735972**

Completed Document Type: Fieldwork
Completed Date: 01/28/2011
Comments: Sampling activities completed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 07/18/2011
Comments: DTSC approved the Final Removal Action Workplan for implementation. Three comments were received on the Draft RAW from the public. DTSC responded to the public comments and forwarded the responses to each resident.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Report
Completed Date: 04/13/2011
Comments: DTSC approved the SSI Report with further action determination and completion of RAW for the removal of OCP and lead contaminated soils at defined hot spots as presented in the report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Community Profile
Completed Date: 06/01/2011
Comments: Final community profile document attached.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fact Sheets
Completed Date: 05/31/2011
Comments: DTSC submitted approved fact sheet in English and Spanish to District. Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Public Notice
Completed Date: 05/26/2011
Comments: District sent final PN.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 01/22/2012
Comments: Fieldwork completed. Impacted soil excavated, transported offsite, clean fill brought into the site. Site is undergoing restoration.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 06/22/2012
Comments: DTSC approved the site with NFA determination. The approved RAW was followed during remvoal activities and soil was properly disposed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence

BURBANK II ELEMENTARY SCHOOL (Continued) **S107735972**

Completed Date:	03/16/2011
Comments:	ESI letter forwarded to District.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	01/03/2011
Comments:	Agreement given to Shahir for signature; fully executed EOA sent (FedEx) to District.
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

42
NE
1/2-1
0.748 mi.
3950 ft.

TECH PARK HIGH SCHOOL **ENVIROSTOR** **S105628862**
THIRD STREET/TIPPECANOE AVENUE **SCH** **N/A**
SAN BERNARDINO, CA 92410

Relative:
Higher

Actual:
1071 ft.

ENVIROSTOR:

Facility ID:	36970015
Status:	Inactive - Needs Evaluation
Status Date:	03/02/2000
Site Code:	404003
Site Type:	School Investigation
Site Type Detailed:	School
Acres:	14
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Mark Malinowski
Division Branch:	Southern California Schools & Brownfields Outreach
Assembly:	40
Senate:	23
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	School District
Latitude:	34.10465
Longitude:	-117.2588
APN:	NONE SPECIFIED
Past Use:	* NATIONAL SECURITY/INTERNATIONAL AFFAIRS
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	SAN BERNARDINO COE
Alias Type:	Alternate Name
Alias Name:	SAN BERNARDINO COE-TECH PARC HIGH
Alias Type:	Alternate Name
Alias Name:	TECH PARK HIGH SCHOOL

TECH PARK HIGH SCHOOL (Continued) **S105628862**

Alias Type: Alternate Name
Alias Name: 404003
Alias Type: Project Code (Site Code)
Alias Name: 36970015
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 01/14/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 03/02/2000
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Facility ID: 36970015
Site Type: School Investigation
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 14
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Not reported
Supervisor: Mark Malinowski
Division Branch: Southern California Schools & Brownfields Outreach
Site Code: 404003
Assembly: 40
Senate: 23
Special Program Status: Not reported
Status: Inactive - Needs Evaluation
Status Date: 03/02/2000
Restricted Use: NO
Funding: School District
Latitude: 34.10465
Longitude: -117.2588
APN: NONE SPECIFIED
Past Use: * NATIONAL SECURITY/INTERNATIONAL AFFAIRS
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED

TECH PARK HIGH SCHOOL (Continued) **S105628862**

Potential Description:	NONE SPECIFIED
Alias Name:	SAN BERNARDINO COE
Alias Type:	Alternate Name
Alias Name:	SAN BERNARDINO COE-TECH PARC HIGH
Alias Type:	Alternate Name
Alias Name:	TECH PARK HIGH SCHOOL
Alias Type:	Alternate Name
Alias Name:	404003
Alias Type:	Project Code (Site Code)
Alias Name:	36970015
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	01/14/2000
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	03/02/2000
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

---

43 West 1/2-1 0.860 mi. 4542 ft. | **TERMINIX 440 S. SIERRA WAY SAN BERNARDINO, CA 92408** | **ENVIROSTOR VCP HIST UST San Bern. Co. Permit** | **U001576076 N/A**

Relative: Lower

Actual: 1010 ft.

ENVIROSTOR:

Facility ID:	36070008
Status:	Active
Status Date:	05/29/2001
Site Code:	400874
Site Type:	Voluntary Cleanup
Site Type Detailed:	Voluntary Cleanup
Acres:	0.5
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Manjul Bose
Supervisor:	Juli Propes
Division Branch:	Cleanup Chatsworth
Assembly:	47
Senate:	20
Special Program:	Voluntary Cleanup Program

TERMINIX (Continued) **U001576076**

Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Responsible Party
Latitude: 34.09344
Longitude: -117.2854
APN: 013621219
Past Use: PESTICIDE/INSECTIDE/RODENTICIDE STORAGE
Potential COC: Chlordane Dieldrin Heptachlor
Confirmed COC: Chlordane Dieldrin Heptachlor
Potential Description: SOIL
Alias Name: 013621219
Alias Type: APN
Alias Name: 110033619001
Alias Type: EPA (FRS #)
Alias Name: 400874
Alias Type: Project Code (Site Code)
Alias Name: 36070008
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 05/16/2001
Comments: A Voluntary Cleanup Agreement between DTSC and Terminix to conduct an RI/FS at the Site was signed on May 16, 2001.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation Workplan
Completed Date: 10/01/2001
Comments: DTSC approved RI workplan.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation Workplan
Completed Date: 09/17/2002
Comments: DTSC approved the RI Addendum workplan

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation Report
Completed Date: 04/30/2003
Comments: Site characterization complete.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Risk Assessment Report
Completed Date: 05/02/2005
Comments: Letter approving RI Report, RI Report Addendum and Risk Assessment issued on 5/2/05

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 07/28/2008
Comments: Property remains the same.

TERMINIX (Continued) **U001576076**

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	05/11/2010
Comments:	Site Visit completed, property unchanged. Photographs taken.

Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2017
Schedule Area Name:	PROJECT WIDE
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Land Use Restriction
Schedule Due Date:	03/09/2016
Schedule Revised Date:	Not reported
Schedule Area Name:	PROJECT WIDE
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Certification
Schedule Due Date:	11/21/2016
Schedule Revised Date:	06/27/2017

VCP:

Facility ID:	36070008
Site Type:	Voluntary Cleanup
Site Type Detail:	Voluntary Cleanup
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	0.5
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Manjul Bose
Supervisor:	Juli Propes
Division Branch:	Cleanup Chatsworth
Site Code:	400874
Assembly:	47
Senate:	20
Special Programs Code:	Voluntary Cleanup Program
Status:	Active
Status Date:	05/29/2001
Restricted Use:	NO
Funding:	Responsible Party
Lat/Long:	34.09344 / -117.2854
APN:	013621219
Past Use:	PESTICIDE/INSECTIDE/RODENTICIDE STORAGE
Potential COC:	30004, 30207, 30308
Confirmed COC:	30004,30207,30308
Potential Description:	SOIL
Alias Name:	013621219
Alias Type:	APN
Alias Name:	110033619001
Alias Type:	EPA (FRS #)
Alias Name:	400874
Alias Type:	Project Code (Site Code)
Alias Name:	36070008
Alias Type:	Envirostor ID Number

TERMINIX (Continued) **U001576076**

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Cleanup Agreement
Completed Date:	05/16/2001
Comments:	A Voluntary Cleanup Agreement between DTSC and Terminix to conduct an RI/FS at the Site was signed on May 16, 2001.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Workplan
Completed Date:	10/01/2001
Comments:	DTSC approved RI workplan.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Workplan
Completed Date:	09/17/2002
Comments:	DTSC approved the RI Addendum workplan

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	04/30/2003
Comments:	Site characterization complete.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Risk Assessment Report
Completed Date:	05/02/2005
Comments:	Letter approving RI Report, RI Report Addendum and Risk Assessment issued on 5/2/05

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	07/28/2008
Comments:	Property remains the same.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	05/11/2010
Comments:	Site Visit completed, property unchanged. Photographs taken.

Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2017
Schedule Area Name:	PROJECT WIDE
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Land Use Restriction
Schedule Due Date:	03/09/2016
Schedule Revised Date:	Not reported
Schedule Area Name:	PROJECT WIDE
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Certification

TERMINIX (Continued) **U001576076**

Schedule Due Date: 11/21/2016
Schedule Revised Date: 06/27/2017

HIST UST:

File Number:	0002A76C
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002A76C.pdf
Region:	STATE
Facility ID:	00000019173
Facility Type:	Other
Other Type:	PEST CONTROL
Contact Name:	BRIAN KNAPP
Telephone:	7148899956
Owner Name:	TERMINIX INTERNATIONAL INC
Owner Address:	440 S. SIERRA WAY
Owner City,St,Zip:	SAN BERNARDINO, CA 92408
Total Tanks:	0001
Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00000000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Visual

Click here for Geo Tracker PDF:

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0006617
Owner:	TERMINIX INT'L BLDG 5
Permit Number:	PT0005966
Permit Category:	HAZMAT HANDLER 11-25 EMPLOYEES
Facility Status:	INACTIVE
Expiration Date:	04/30/2002

44
West
1/2-1
0.977 mi.
5158 ft.

BURBANK ELEMENTARY **ENVIROSTOR** **S107735971**
198 WEST MILL STREET **SCH** **N/A**
SAN BERNARDINO, CA 92408

Relative:
Lower

Actual:
1004 ft.

ENVIROSTOR:

Facility ID:	36820001
Status:	No Further Action
Status Date:	09/12/2000
Site Code:	404132
Site Type:	School Cleanup
Site Type Detailed:	School
Acres:	1
NPL:	NO
Regulatory Agencies:	DTSC
Lead Agency:	DTSC
Program Manager:	Not reported
Supervisor:	Yolanda Garza
Division Branch:	Southern California Schools & Brownfields Outreach

BURBANK ELEMENTARY (Continued) **S107735971**

Assembly: 47
Senate: 20
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 34.09217
Longitude: -117.2873
APN: NONE SPECIFIED
Past Use: * EDUCATIONAL SERVICES
Potential COC: Aldrin Heptachlor DDT Chlordane Dieldrin
Confirmed COC: NONE SPECIFIED
Potential Description: NMA
Alias Name: BURBANK ELMENTARY SCHOOL
Alias Type: Alternate Name
Alias Name: SAN BERNARDINO CITY SD-BURBANK ELEMENTAR
Alias Type: Alternate Name
Alias Name: 404132
Alias Type: Project Code (Site Code)
Alias Name: 36820001
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 03/09/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 11/01/2005
Comments: CRU Memo completed.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Facility ID: 36820001
Site Type: School Cleanup
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 1
National Priorities List: NO
Cleanup Oversight Agencies: DTSC
Lead Agency: DTSC
Lead Agency Description: * DTSC
Project Manager: Not reported

BURBANK ELEMENTARY (Continued) **S107735971**

Supervisor:	Yolanda Garza
Division Branch:	Southern California Schools & Brownfields Outreach
Site Code:	404132
Assembly:	47
Senate:	20
Special Program Status:	Not reported
Status:	No Further Action
Status Date:	09/12/2000
Restricted Use:	NO
Funding:	School District
Latitude:	34.09217
Longitude:	-117.2873
APN:	NONE SPECIFIED
Past Use:	* EDUCATIONAL SERVICES
Potential COC:	Aldrin, Aldrin, Heptachlor, DDT, Chlordane, Dieldrin
Confirmed COC:	NONE SPECIFIED
Potential Description:	NMA
Alias Name:	BURBANK ELMENTARY SCHOOL
Alias Type:	Alternate Name
Alias Name:	SAN BERNARDINO CITY SD-BURBANK ELEMENTAR
Alias Type:	Alternate Name
Alias Name:	404132
Alias Type:	Project Code (Site Code)
Alias Name:	36820001
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	03/09/2001
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	11/01/2005
Comments:	CRU Memo completed.
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

45 West 1/2-1 0.990 mi. 5227 ft. | **TROJAN PLATING CO. #1**
268 SOUTH MOUNTAIN VIEW
SAN BERNARDINO, CA 92408 | **ENVIROSTOR** | **S102860936**
N/A

Relative: Lower

Actual: 1010 ft.

ENVIROSTOR:

Facility ID:	36340032
Status:	Inactive - Action Required
Status Date:	08/05/2015
Site Code:	400855
Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	0.5
NPL:	NO
Regulatory Agencies:	SMBRP, US EPA
Lead Agency:	SMBRP,US EPA
Program Manager:	Not reported
Supervisor:	Douglas Bautista
Division Branch:	Cleanup Cypress
Assembly:	47
Senate:	20
Special Program:	EPA - PASI
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	34.09648
Longitude:	-117.2877
APN:	013620231
Past Use:	NONE SPECIFIED
Potential COC:	* ORGANIC LIQUIDS WITH METALS * Sludge - Halogenated Compounds * TANK BOTTOM WASTES * UNSPECIFIED ACID SOLUTION * UNSPECIFIED SLUDGE WASTE * OTHER PESTICIDE CONTAINERS, 30 GALLONS OR MORE Cadmium and compounds Chromium VI Cyanide (free Nickel
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	013620231
Alias Type:	APN
Alias Name:	CAD982360489
Alias Type:	CERCLIS ID
Alias Name:	400855
Alias Type:	Project Code (Site Code)
Alias Name:	400855
Alias Type:	Project Code (Site Code)
Alias Name:	36340032
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Discovery
Completed Date:	01/11/1983
Comments:	Facility identifed ID VIA Phonebook (1972) Plating Firm
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment/Site Inspection Report (PA/SI)
Completed Date:	06/14/2001
Comments:	PASI

TROJAN PLATING CO. #1 (Continued) **S102860936**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 04/28/1989
Comments: Prelim assess done a high priority screening site insp is recommedned under CERCLA due to high tocicity and persistence for Hazardous constituents and a high groundwater route target population. TPC conducted Cadmium, Copper, Nickel, Chrome Tin, Gold and Silver Plating of metal parts. Very poor housekeeping. Improper storage of Hazardous Materials. Photos of the front of the facility.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 03/20/1987
Comments: Site Screening done further record search needed for waste disp practices.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: PA/SI Reassessment
Completed Date: 12/21/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: PA/SI Reassessment
Completed Date: 01/13/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: PA/SI Reassessment
Completed Date: 05/29/2015
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Count: 6 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
SAN BERNARDINO	1003878981	SECCOMBE LAKE STATE REC AREA	7TH ST BETW SERRIA & WATERMAN	92410	SEMS-ARCHIVE
SAN BERNARDINO	S107736451	HIGH SCHOOL NO. 8 PARCEL A/NEW CUR	9TH STREET/DEL ROSA AVENUE	92410	ENVIROSTOR, SCH
SAN BERNARDINO	S108543100	SOUTHERN PACIFIC RAIL YARD	NA MILL STREET		SLIC
SAN BERNARDINO	S108985941	U.S. AIR FORCE - NORTON AFB (FORME	MILL STREET		SLIC
SAN BERNARDINO	S104756707	MERIT OIL COMPANY	1405 RIALTO AVE	92410	LUST, HIST CORTESE
SAN BERNARDINO	S106797656	CSCO SCREW COMPANY	775 UNIT 6-7 S. GIFFORD STREET	92408	ENVIROSTOR

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 03/07/2016	Source: EPA
Date Data Arrived at EDR: 04/05/2016	Telephone: N/A
Date Made Active in Reports: 04/15/2016	Last EDR Contact: 10/05/2016
Number of Days to Update: 10	Next Scheduled EDR Contact: 01/16/2017
	Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/13/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/06/2016	Telephone: 703-603-8704
Date Made Active in Reports: 05/20/2016	Last EDR Contact: 10/04/2016
Number of Days to Update: 135	Next Scheduled EDR Contact: 01/16/2017
	Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/07/2016	Source: EPA
Date Data Arrived at EDR: 04/05/2016	Telephone: 800-424-9346
Date Made Active in Reports: 04/15/2016	Last EDR Contact: 07/22/2016
Number of Days to Update: 10	Next Scheduled EDR Contact: 10/31/2016
	Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/22/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/12/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/28/2016
Date Data Arrived at EDR: 03/30/2016
Date Made Active in Reports: 05/20/2016
Number of Days to Update: 51

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 08/01/2016
Date Data Arrived at EDR: 08/02/2016
Date Made Active in Reports: 10/05/2016
Number of Days to Update: 64

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 08/01/2016
Date Data Arrived at EDR: 08/02/2016
Date Made Active in Reports: 10/05/2016
Number of Days to Update: 64

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/15/2016
Date Data Arrived at EDR: 08/16/2016
Date Made Active in Reports: 10/05/2016
Number of Days to Update: 50

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/16/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/13/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 12/11/2015
Date Data Arrived at EDR: 02/19/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 105

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/09/2015
Date Data Arrived at EDR: 02/12/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 112

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/17/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

SLIC: Statewide SLIC Cases
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/13/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 55

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/26/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 119

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 12/03/2015
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 120

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 08/01/2016
Date Data Arrived at EDR: 08/02/2016
Date Made Active in Reports: 10/05/2016
Number of Days to Update: 64

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Quarterly

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 02/29/2016
Date Data Arrived at EDR: 03/07/2016
Date Made Active in Reports: 05/04/2016
Number of Days to Update: 58

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/22/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/21/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 06/16/2016
Date Data Arrived at EDR: 06/16/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 54

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/10/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 08/05/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 08/31/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 10/10/2016
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 08/01/2016
Date Data Arrived at EDR: 08/02/2016
Date Made Active in Reports: 10/05/2016
Number of Days to Update: 64

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 05/10/2016
Date Made Active in Reports: 06/17/2016
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 08/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 06/07/2016
Date Data Arrived at EDR: 06/09/2016
Date Made Active in Reports: 06/23/2016
Number of Days to Update: 14

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 43

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 06/06/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 43

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 06/28/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 87

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/27/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 06/03/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing
The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/13/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing
The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/13/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/15/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 05/08/2016
Date Data Arrived at EDR: 05/18/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 107

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/23/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 99

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 08/12/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 04/28/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 127

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 03/18/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 28

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/05/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/07/2015
Date Data Arrived at EDR: 07/09/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/31/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/21/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/07/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 148

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/05/2016
Date Data Arrived at EDR: 09/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 22

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/01/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/20/2015
Date Data Arrived at EDR: 09/09/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 55

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 91

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 67

Source: Department of Defense
Telephone: 571-373-0407
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Varies

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 06/28/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 51

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/27/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 37

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 06/22/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 48

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/23/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/22/2016
Date Data Arrived at EDR: 08/24/2016
Date Made Active in Reports: 10/05/2016
Number of Days to Update: 42

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/22/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 04/25/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 53

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/10/2016
Date Data Arrived at EDR: 08/15/2016
Date Made Active in Reports: 10/05/2016
Number of Days to Update: 51

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/10/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 10/14/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 58

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Annually

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/22/2016
Date Data Arrived at EDR: 08/23/2016
Date Made Active in Reports: 10/05/2016
Number of Days to Update: 43

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/23/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/11/2016
Date Data Arrived at EDR: 07/13/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 36

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/13/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Varies

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 43

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 05/16/2016
Date Data Arrived at EDR: 05/18/2016
Date Made Active in Reports: 06/23/2016
Number of Days to Update: 36

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/16/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 06/06/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 43

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 06/13/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 56

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 09/10/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 38

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 02/12/2016
Date Data Arrived at EDR: 03/16/2016
Date Made Active in Reports: 06/13/2016
Number of Days to Update: 89

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/23/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

ICE: ICE
Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 08/22/2016
Date Data Arrived at EDR: 08/23/2016
Date Made Active in Reports: 10/05/2016
Number of Days to Update: 43

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 08/23/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/20/2015
Date Data Arrived at EDR: 09/23/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 103

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 09/20/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/24/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 07/13/2016
Number of Days to Update: 49

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/23/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 07/07/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 37

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 07/07/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 27

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List
Cupa Facility List

Date of Government Version: 06/06/2016
Date Data Arrived at EDR: 06/09/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 12

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 18

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 07/20/2016
Date Data Arrived at EDR: 07/25/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 60

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 06/17/2016
Number of Days to Update: 22

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 05/24/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 55

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 08/01/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 04/08/2016
Date Data Arrived at EDR: 05/03/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 50

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 05/24/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 75

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 07/13/2016
Date Data Arrived at EDR: 07/19/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 21

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/08/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 41

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/22/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 07/25/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 05/16/2016
Date Data Arrived at EDR: 05/20/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 80

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 05/27/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 26

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 04/26/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/17/2016
Number of Days to Update: 51

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 08/19/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 07/05/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 37

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/15/2016
Date Data Arrived at EDR: 07/19/2016
Date Made Active in Reports: 10/05/2016
Number of Days to Update: 78

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/19/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 56

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 07/18/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 03/29/2016
Date Data Arrived at EDR: 04/06/2016
Date Made Active in Reports: 06/13/2016
Number of Days to Update: 68

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/13/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 07/13/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 11/04/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 06/23/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 28

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/18/2016
Date Data Arrived at EDR: 08/22/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 32

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 04/07/2016
Date Data Arrived at EDR: 04/26/2016
Date Made Active in Reports: 06/01/2016
Number of Days to Update: 36

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 08/17/2016
Date Data Arrived at EDR: 08/22/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 32

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List

CUPA Facility List

Date of Government Version: 05/25/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 21

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing

CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/24/2016
Date Data Arrived at EDR: 06/27/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 43

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 08/22/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 07/25/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 08/01/2016
Date Data Arrived at EDR: 08/15/2016
Date Made Active in Reports: 10/05/2016
Number of Days to Update: 51

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/17/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 35

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/11/2016
Date Made Active in Reports: 06/01/2016
Number of Days to Update: 21

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/09/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 06/16/2016
Date Data Arrived at EDR: 06/20/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 50

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/13/2016
Date Data Arrived at EDR: 04/15/2016
Date Made Active in Reports: 05/09/2016
Number of Days to Update: 24

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 07/13/2016
Date Data Arrived at EDR: 07/18/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 21

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 05/02/2016
Date Data Arrived at EDR: 07/06/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 43

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/04/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 05/02/2016
Date Data Arrived at EDR: 07/06/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 43

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/04/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/10/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 40

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/02/2016
Next Scheduled EDR Contact: 09/19/2016
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/16/2016
Date Data Arrived at EDR: 06/20/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 49

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/18/2016
Date Data Arrived at EDR: 08/22/2016
Date Made Active in Reports: 10/04/2016
Number of Days to Update: 43

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 15

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/13/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 57

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 08/17/2016
Date Data Arrived at EDR: 08/22/2016
Date Made Active in Reports: 10/04/2016
Number of Days to Update: 43

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Annually

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 05/26/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 07/20/2016
Number of Days to Update: 49

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List

CUPA facility listing.

Date of Government Version: 08/17/2016
Date Data Arrived at EDR: 08/22/2016
Date Made Active in Reports: 10/04/2016
Number of Days to Update: 43

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List

Cupa Facility List.

Date of Government Version: 06/14/2016
Date Data Arrived at EDR: 06/16/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 54

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/22/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/13/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 57

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/14/2016
Date Made Active in Reports: 08/08/2016
Number of Days to Update: 55

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 07/10/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 28

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/01/2016
Date Data Arrived at EDR: 07/05/2016
Date Made Active in Reports: 08/18/2016
Number of Days to Update: 44

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/07/2016
Date Made Active in Reports: 06/23/2016
Number of Days to Update: 16

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 08/12/2016
Date Data Arrived at EDR: 08/16/2016
Date Made Active in Reports: 10/04/2016
Number of Days to Update: 49

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 06/28/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/10/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 03/28/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/22/2016
Number of Days to Update: 54

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/26/2016
Date Data Arrived at EDR: 06/16/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 54

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/14/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 06/30/2016
Date Data Arrived at EDR: 07/05/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 35

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 08/03/2016
Date Data Arrived at EDR: 08/05/2016
Date Made Active in Reports: 10/05/2016
Number of Days to Update: 61

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/10/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/17/2015
Date Made Active in Reports: 08/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/11/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 08/01/2016
Date Data Arrived at EDR: 08/03/2016
Date Made Active in Reports: 09/09/2016
Number of Days to Update: 37

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/03/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 25

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/18/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 09/20/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 04/14/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 50

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/12/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

WESTGATE KOHLS
SEC OF S LENA ROAD & TENNIS CT LN
SAN BERNARDINO, CA 92408

TARGET PROPERTY COORDINATES

Latitude (North):	34.094961 - 34˚ 5' 41.86''
Longitude (West):	117.269095 - 117˚ 16' 8.74''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	475176.8
UTM Y (Meters):	3772523.0
Elevation:	1040 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5620416 SAN BERNARDINO SOUTH, CA
Version Date:	2012
Southeast Map:	5630631 REDLANDS, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

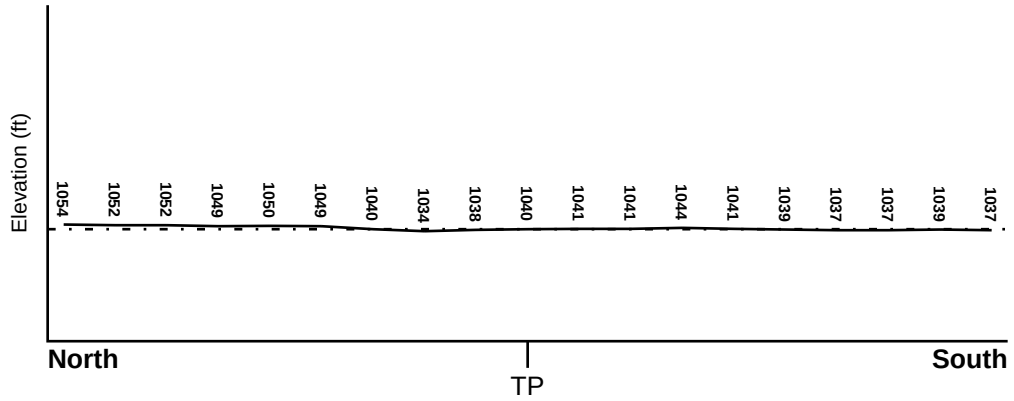
TOPOGRAPHIC INFORMATION

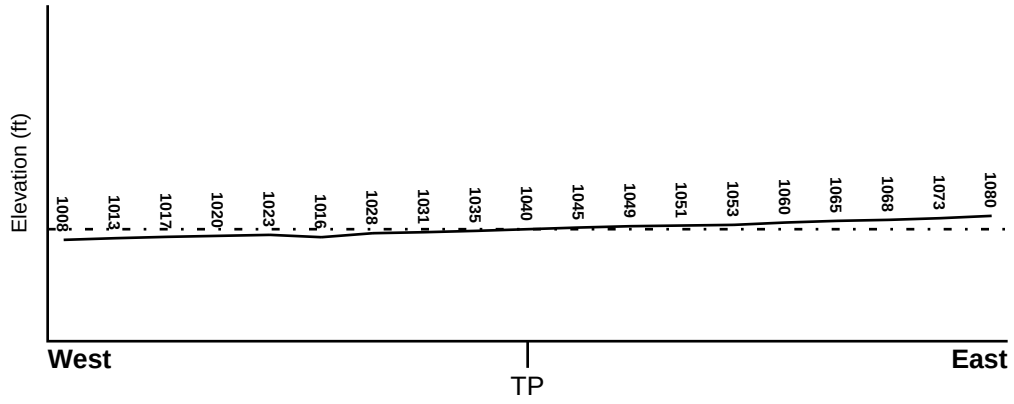
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General WNW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 1040 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06071C8682H	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06071C8681H	FEMA FIRM Flood data
06071C8683H	FEMA FIRM Flood data
06071C8684H	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Location Relative to TP:	1 - 2 Miles West
Site Name:	Trojan Plating Co #1
Site EPA ID Number:	CAD982360489
Groundwater Flow Direction:	Southwest
Inferred Depth to Water:	20 feet.
Hydraulic Connection:	Two major clay lenses that confine aquifers exist within 3 miles of the site, but due to discontinuities, aquifer interconnections occur.
Sole Source Aquifer:	No information about a sole source aquifer is available
Data Quality:	Information is inferred in the CERCLIS investigation report(s)

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW

* ©1996 Site--specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
A3	1/8 - 1/4 Mile South	SSE

For additional site information, refer to Physical Setting Source Map Findings.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

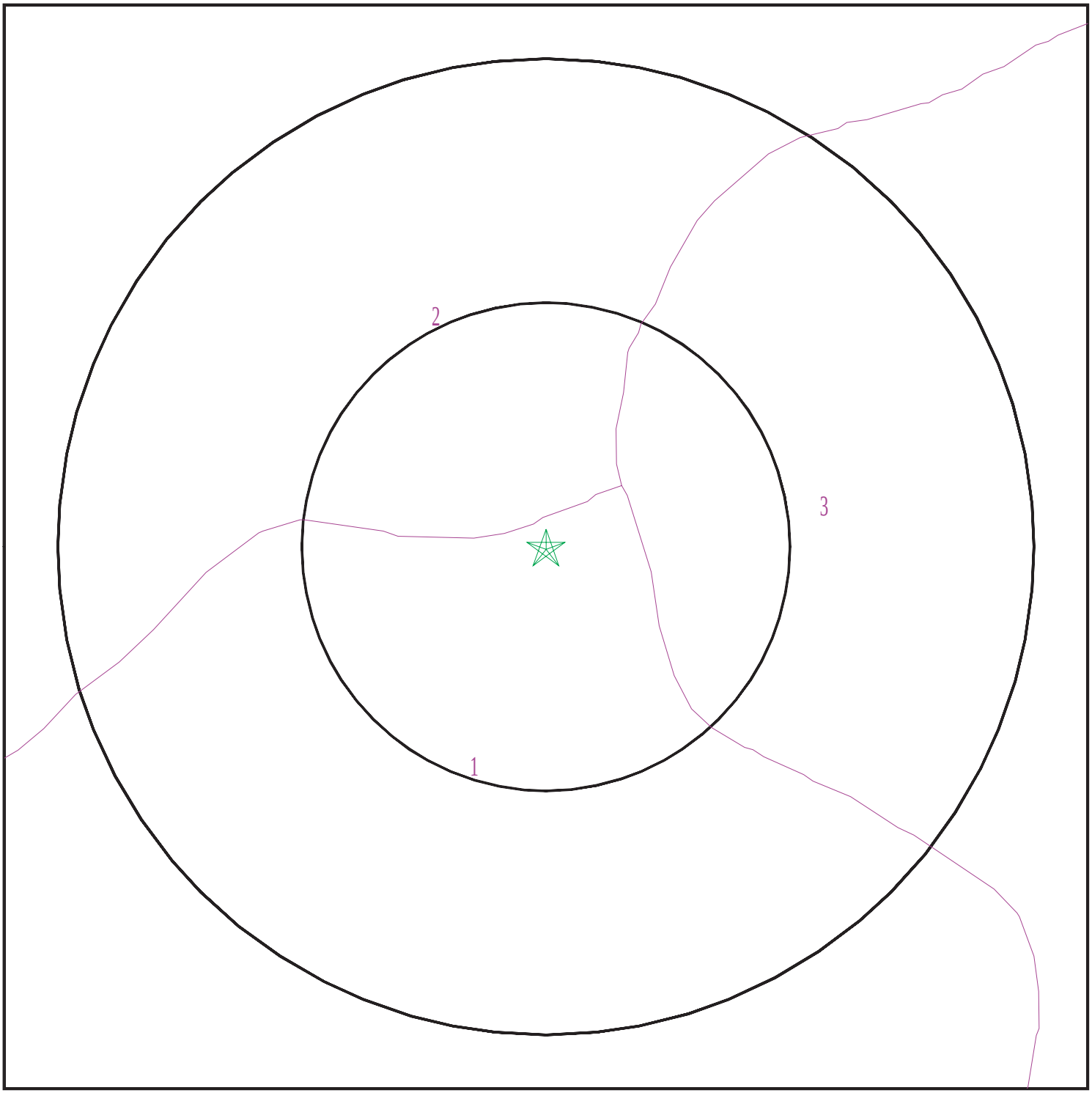
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4746163.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Westgate Kohls	CLIENT:	Terracon
ADDRESS:	SEC of S Lena Road & Tennis CT Ln San Bernardino CA 92408	CONTACT:	David Jamison
		INQUIRY #:	4746163.2s
LAT/LONG:	34.094961 / 117.269095	DATE:	October 06, 2016 9:21 am

Copyright © 2016 EDR, Inc. © 2015 TomTom Rel. 2015.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Hanford

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 6.1
2	11 inches	59 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 5.6

Soil Map ID: 2

Soil Component Name: GRANGEVILLE

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Somewhat poorly drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 9 Min: 7.9
2	11 inches	59 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6

Soil Map ID: 3

Soil Component Name: TUJUNGA

Soil Surface Texture: gravelly loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	35 inches	gravelly loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.1
2	35 inches	59 inches	gravelly sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.1

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	USGS40000140917	1/8 - 1/4 Mile SSE
4	USGS40000141002	1/8 - 1/4 Mile NNE
B12	USGS40000141011	1/4 - 1/2 Mile NNW
B13	USGS40000141010	1/4 - 1/2 Mile NNW
B14	USGS40000141009	1/4 - 1/2 Mile NNW
B15	USGS40000141014	1/4 - 1/2 Mile NNW
B16	USGS40000141015	1/4 - 1/2 Mile NNW
B17	USGS40000141012	1/4 - 1/2 Mile NNW
B18	USGS40000141013	1/4 - 1/2 Mile NNW
20	USGS40000140871	1/4 - 1/2 Mile SSW
C26	USGS40000140921	1/4 - 1/2 Mile ESE
E27	USGS40000141041	1/4 - 1/2 Mile NNW
29	USGS40000140854	1/4 - 1/2 Mile South
30	USGS40000141053	1/4 - 1/2 Mile North
D31	USGS40000141052	1/4 - 1/2 Mile NNE
32	USGS40000141061	1/4 - 1/2 Mile NNE
G34	USGS40000141028	1/4 - 1/2 Mile NW
F35	USGS40000141058	1/4 - 1/2 Mile NNE
G37	USGS40000141026	1/4 - 1/2 Mile NW
38	USGS40000141077	1/2 - 1 Mile North
39	USGS40000141054	1/2 - 1 Mile NW
I41	USGS40000140833	1/2 - 1 Mile South
J42	USGS40000140915	1/2 - 1 Mile WSW
H44	USGS40000140962	1/2 - 1 Mile East
K45	USGS40000141029	1/2 - 1 Mile NW
K46	USGS40000141030	1/2 - 1 Mile NW
M48	USGS40000140990	1/2 - 1 Mile ENE
J50	USGS40000140896	1/2 - 1 Mile WSW
N51	USGS40000140999	1/2 - 1 Mile WNW
L52	USGS40000140907	1/2 - 1 Mile ESE
53	USGS40000140938	1/2 - 1 Mile West
L58	USGS40000140895	1/2 - 1 Mile ESE
59	USGS40000141055	1/2 - 1 Mile NW
N60	USGS40000140991	1/2 - 1 Mile WNW
61	USGS40000141099	1/2 - 1 Mile North
O63	USGS40000140881	1/2 - 1 Mile ESE
N64	USGS40000141016	1/2 - 1 Mile WNW
O65	USGS40000140890	1/2 - 1 Mile ESE
66	USGS40000140800	1/2 - 1 Mile South
P67	USGS40000140821	1/2 - 1 Mile SSW
68	USGS40000140982	1/2 - 1 Mile West
69	USGS40000140798	1/2 - 1 Mile SSW
70	USGS40000141059	1/2 - 1 Mile NW
S74	USGS40000140790	1/2 - 1 Mile SSW
75	USGS40000140832	1/2 - 1 Mile SE
S76	USGS40000140791	1/2 - 1 Mile SSW
T78	USGS40000141100	1/2 - 1 Mile NNW
Q79	USGS40000141008	1/2 - 1 Mile ENE
80	USGS40000140961	1/2 - 1 Mile East
U81	USGS40000140891	1/2 - 1 Mile WSW
Q82	USGS40000141021	1/2 - 1 Mile ENE
R83	USGS40000140903	1/2 - 1 Mile ESE

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
V90	USGS40000140802	1/2 - 1 Mile SSW
V91	USGS40000140801	1/2 - 1 Mile SSW
V92	USGS40000140805	1/2 - 1 Mile SSW
V93	USGS40000140806	1/2 - 1 Mile SSW
V94	USGS40000140803	1/2 - 1 Mile SSW
V95	USGS40000140804	1/2 - 1 Mile SSW
W96	USGS40000140963	1/2 - 1 Mile West
R98	USGS40000140914	1/2 - 1 Mile ESE
W100	USGS40000140983	1/2 - 1 Mile West
W101	USGS40000140964	1/2 - 1 Mile West
102	USGS40000141122	1/2 - 1 Mile NNW
Y105	USGS40000140797	1/2 - 1 Mile SSE
X109	USGS40000140866	1/2 - 1 Mile ESE
AB112	USGS40000140892	1/2 - 1 Mile WSW
AB116	USGS40000140886	1/2 - 1 Mile WSW
AD117	USGS40000141112	1/2 - 1 Mile NW
118	USGS40000140796	1/2 - 1 Mile SE
AA119	USGS40000141111	1/2 - 1 Mile NE
AA120	USGS40000141110	1/2 - 1 Mile NE
AD121	USGS40000141116	1/2 - 1 Mile NW
AE122	USGS40000141093	1/2 - 1 Mile NE
AE123	USGS40000141094	1/2 - 1 Mile NE
AF126	USGS40000140828	1/2 - 1 Mile SE
AD128	USGS40000141129	1/2 - 1 Mile NW
129	USGS40000140954	1/2 - 1 Mile West
131	USGS40000140741	1/2 - 1 Mile South
AF132	USGS40000140820	1/2 - 1 Mile SE
135	USGS40000140931	1/2 - 1 Mile East
AG136	USGS40000141033	1/2 - 1 Mile ENE
137	USGS40000141193	1/2 - 1 Mile NNW
139	USGS40000140751	1/2 - 1 Mile SSE
AJ141	USGS40000140815	1/2 - 1 Mile SE
AK142	USGS40000140789	1/2 - 1 Mile SE
AH143	USGS40000140737	1/2 - 1 Mile SSE
146	USGS40000141230	1/2 - 1 Mile North
AI147	USGS40000140880	1/2 - 1 Mile ESE
148	USGS40000141229	1/2 - 1 Mile North
AK149	USGS40000140782	1/2 - 1 Mile SE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

STATE DATABASE WELL INFORMATION

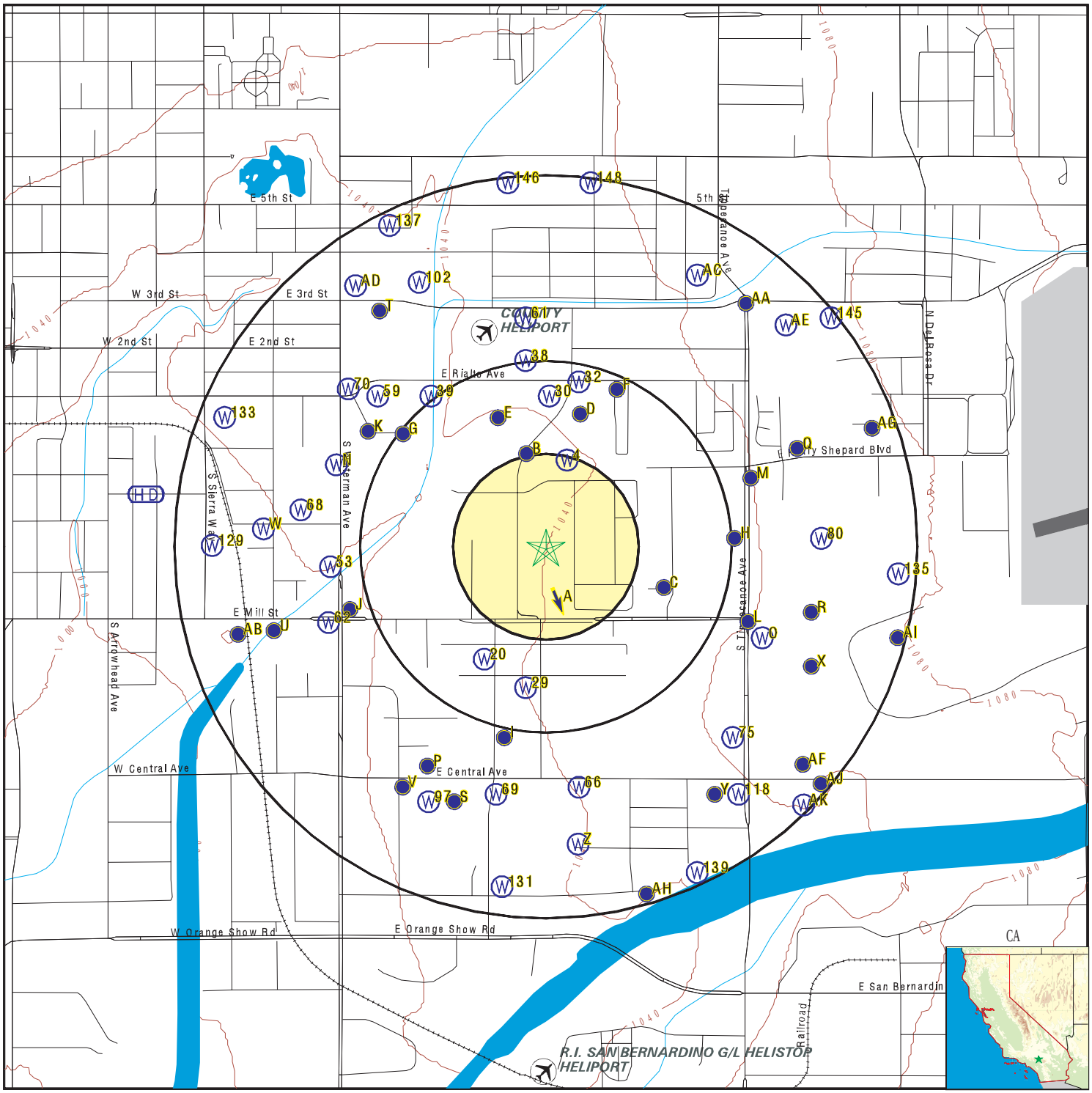
MAP ID	WELL ID	LOCATION FROM TP
A1	CADW60000001689	1/8 - 1/4 Mile South
B5	CADW60000001462	1/4 - 1/2 Mile NNW
B6	CADW60000001461	1/4 - 1/2 Mile NNW
B7	CADW60000001460	1/4 - 1/2 Mile NNW
B8	CADW60000015539	1/4 - 1/2 Mile NNW
B9	CADW60000015630	1/4 - 1/2 Mile NNW
B10	CADW60000015541	1/4 - 1/2 Mile NNW
B11	CADW60000015540	1/4 - 1/2 Mile NNW
C19	CADW60000017698	1/4 - 1/2 Mile ESE
D21	858	1/4 - 1/2 Mile NNE
D22	857	1/4 - 1/2 Mile NNE
D23	859	1/4 - 1/2 Mile NNE
D24	866	1/4 - 1/2 Mile NNE
D25	865	1/4 - 1/2 Mile NNE
E28	CADW60000017695	1/4 - 1/2 Mile NNW
F33	CADW60000017696	1/4 - 1/2 Mile NNE
H36	CADW60000017700	1/4 - 1/2 Mile East
G40	CADW60000016177	1/2 - 1 Mile NW
I43	CADW60000032710	1/2 - 1 Mile SSW
L47	CADW60000001693	1/2 - 1 Mile ESE
J49	CADW60000017697	1/2 - 1 Mile WSW
L54	CADW60000001694	1/2 - 1 Mile ESE
K55	CADW60000001687	1/2 - 1 Mile WNW
K56	CADW60000017694	1/2 - 1 Mile WNW
M57	901	1/2 - 1 Mile ENE
62	CADW60000032709	1/2 - 1 Mile WSW
P71	CADW60000018156	1/2 - 1 Mile SSW
Q72	CADW60000001691	1/2 - 1 Mile ENE
R73	CADW60000017703	1/2 - 1 Mile ESE
S77	CADW60000018157	1/2 - 1 Mile SSW
V84	CADW60000001614	1/2 - 1 Mile SSW
V85	CADW60000001471	1/2 - 1 Mile SSW
V86	CADW60000001470	1/2 - 1 Mile SSW
V87	CADW60000015632	1/2 - 1 Mile SSW
V88	CADW60000015631	1/2 - 1 Mile SSW
V89	CADW60000001615	1/2 - 1 Mile SSW
97	CADW60000032711	1/2 - 1 Mile SSW
X99	CADW60000017702	1/2 - 1 Mile ESE
U103	CADW60000018161	1/2 - 1 Mile WSW
T104	891	1/2 - 1 Mile NW
T106	890	1/2 - 1 Mile NW
Z107	906	1/2 - 1 Mile South
Z108	907	1/2 - 1 Mile South
Y110	CADW60000017704	1/2 - 1 Mile SE
AA111	CADW60000017699	1/2 - 1 Mile NE
AC113	888	1/2 - 1 Mile NNE
AC114	889	1/2 - 1 Mile NNE
AC115	9782	1/2 - 1 Mile NNE
AB124	CADW60000018160	1/2 - 1 Mile WSW
AF125	CADW60000017705	1/2 - 1 Mile SE
AB127	CADW60000030854	1/2 - 1 Mile WSW
AG130	812	1/2 - 1 Mile ENE

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
133	869	1/2 - 1 Mile WNW
AF134	CADW60000032708	1/2 - 1 Mile SE
AH138	CADW60000018158	1/2 - 1 Mile SSE
AI140	CADW60000001692	1/2 - 1 Mile ESE
AJ144	893	1/2 - 1 Mile SE
145	CADW60000001690	1/2 - 1 Mile NE

PHYSICAL SETTING SOURCE MAP - 4746163.2s



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Airports
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location
HD Closest Hydrogeological Data
Oil, gas or related wells

SITE NAME: Westgate Kohls	CLIENT: Terracon
ADDRESS: SEC of S Lena Road & Tennis CT Ln San Bernardino CA 92408	CONTACT: David Jamison
LAT/LONG: 34.094961 / 117.269095	INQUIRY #: 4746163.2s
	DATE: October 06, 2016 9:21 am

Copyright © 2016 EDR, Inc. © 2015 TomTom Rel. 2015.

Map ID Direction Distance Elevation	Database	EDR ID Number
A1 **South** **1/8 - 1/4 Mile** **Higher**	**CA WELLS**	**CADW60000001689**

Objectid:	1689
Latitude:	34.0931
Longitude:	-117.2687
Site code:	340931N1172687W001
State well numbe:	01S04W11Q001S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001689

A2 **SSE** **1/8 - 1/4 Mile** **Higher**	**FED USGS**	**USGS40000140917**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340535117160101		
Monloc name:	001S004W11Q001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0930678
Longitude:	-117.2678199	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1041.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19290101	Welldepth:	174
Welldepth units:	ft	Wellholedepth:	188
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 214

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1965-02-12					

Note: An obstruction was encountered in the well above the water surface (no water level recorded).

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1964-08-13	103.50	
1964-02-27	94.50	
1963-10-11	94.30	
1963-03-21	87.10	
1962-10-05	84.90	
1962-03-13	74.00	
1961-09-21	77.80	
1961-03-07	68.90	
1960-09-27	72.70	
1959-12-17	62.10	
1959-01-16	50.90	
1958-03-14	43.30	
1957-11-27	53.50	
1956-12-19	49.30	
1956-09-13	50.10	
1956-06-11	43.30	
1956-03-06	29.00	
1955-11-16	43.20	
1955-08-16	43.40	
1955-03-30	30.20	
1954-12-17	25.80	
1954-07-23	38.30	
1954-03-18	22.20	
1953-12-22	33.40	
1953-10-06	36.00	
1952-05-09	10.20	
1951-12-04	27.40	
1951-03-10	17.70	
1950-04-25	18.70	
1949-12-13	21.20	
1949-09-12	48.60	
Note: The site was being pumped.		
1949-04-25	15.90	
1948-11-10	15.70	
1948-04-06	8.40	
1947-09-16	15.10	
1947-03-26	9.10	
1946-08-29	14.60	
1946-03-25	9.30	
1945-10-19	10.60	
1945-06-08	9.40	
1944-11-16	2.80	
1944-08-04	13.00	
1944-05-05	5.10	
1943-11-09	9.70	
1943-08-06	12.20	
1943-04-27	1.80	
1942-12-21	8.40	
1941-11-13	1.60	
1941-08-25	9.80	
1941-06-02	3.10	
1940-12-06	9.60	
1940-09-26	15.00	
1940-07-22	15.00	
1940-05-23	10.90	

Date	Feet below Surface	Feet to Sealevel
1964-04-07	94.00	
1963-11-29	94.20	
1963-08-02	92.50	
1963-01-17	88.50	
1962-06-15	77.00	
1961-12-15	79.50	
1961-06-15	77.50	
1960-12-09	68.70	
1960-03-15	48.50	
1959-09-10	60.00	
1958-05-16	47.70	
1958-01-22	49.70	
1957-09-26	57.80	
1956-10-26	50.70	
1956-07-26	45.80	
1956-04-19	37.70	
1956-01-11	42.60	
1955-09-29	44.00	
1955-05-13	34.50	
1955-01-31	23.50	
1954-10-22	40.20	
1954-04-29	26.80	
1954-02-04	22.50	
1953-11-12	35.10	
1953-07-09	32.50	
1952-03-20	9.70	
1951-10-01	27.00	
1950-11-07	28.20	
1950-02-21	5.10	
1949-02-08	3.10	
1948-06-29	15.80	
1947-12-31	7.70	
1947-06-12	12.90	
1946-12-13	0.90	
1946-05-29	11.50	
1946-01-17	3.10	
1945-08-13	13.00	
1945-01-25	4.50	
1944-09-27	12.30	
1944-06-21	10.90	
1944-01-03	0.50	
1943-09-20	12.10	
1943-06-07	7.70	
1943-02-05	0.20	
1942-02-17	5.50	
1941-09-29	9.10	
1941-07-15	8.30	
1941-01-22	0.90	
1940-10-25	13.40	
1940-08-27	15.10	
1940-06-27	12.40	
1940-04-23	8.30	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1940-03-21	6.20	
1940-01-25	1.30	
1939-11-30	10.30	
1939-09-28	10.40	
1939-07-31	12.30	
1939-05-23	10.10	
1939-03-23	5.60	
1939-01-04	1.10	
1938-11-30	10.10	
1938-10-24	10.30	
1938-08-30	11.50	
1938-06-24	5.20	
1938-04-28	9.90	
1938-02-24	3.50	
1937-12-28	5.90	
1937-09-27	16.60	
1937-08-02	16.60	
1937-07-02	14.40	
1937-03-04	6.20	
1937-01-04	10.30	
1936-11-02	13.70	
1936-09-02	25.30	
1936-04-30	18.60	
1936-03-02	8.70	
1936-01-02	15.40	
1935-10-31	22.30	
1935-09-03	22.50	
1935-06-01	18.10	
1935-04-09	7.30	
1935-02-11	7.10	
1934-11-05	18.90	
1934-07-31	23.30	
1934-06-06	19.80	
1934-04-06	18.00	
1934-02-07	9.30	
1933-11-07	17.10	
1933-09-06	18.40	
1933-07-07	17.40	
1931-10-03	20.80	
1931-09-18	18.60	
1931-09-10	17.70	
1931-09-08	17.10	
1931-09-06	17.30	
1931-09-04	16.00	
1931-09-01	14.00	
1931-08-29	20.20	
1931-08-27	21.50	
1931-08-25	22.00	
1931-08-21	21.80	
1931-08-14	20.20	
1931-08-12	21.70	
1931-08-07	19.60	
1931-08-03	20.80	
1931-07-30	63.30	

Note: The site was being pumped.

Date	Feet below Surface	Feet to Sealevel
1940-02-23	0.30	
1939-12-28	7.60	
1939-10-25	11.00	
1939-08-30	13.60	
1939-07-01	12.30	
1939-04-25	5.60	
1939-01-23	0.60	
1938-12-27	1.90	
1938-11-07	10.10	
1938-09-27	11.90	
1938-07-26	10.40	
1938-06-01	4.10	
1938-03-31	1.30	
1938-01-26	7.50	
1937-10-26	16.30	
1937-09-02	10.70	
1937-08-01	9.90	
1937-04-07	4.70	
1937-01-30	9.20	
1936-12-02	19.60	
1936-10-01	25.50	
1936-06-02	22.00	
1936-03-30	16.30	
1936-02-04	13.20	
1935-12-02	20.90	
1935-10-02	23.30	
1935-08-02	23.60	
1935-05-08	16.40	
1935-03-13	6.40	
1935-01-16	8.70	
1934-09-04	23.30	
1934-06-28	20.20	
1934-05-09	18.00	
1934-03-05	5.80	
1934-01-03	6.70	
1933-10-05	18.00	
1933-08-05	19.70	
1933-06-12	17.30	
1931-09-26	20.40	
1931-09-11	18.30	
1931-09-09	17.20	
1931-09-07	17.00	
1931-09-05	18.00	
1931-09-03	15.50	
1931-08-31	11.50	
1931-08-28	21.70	
1931-08-26	20.30	
1931-08-22	20.30	
1931-08-19	20.60	
1931-08-13	20.90	
1931-08-11	21.40	
1931-08-04	21.10	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1931-07-29	20.30				

Note: The site was being pumped.

A3
South
1/8 - 1/4 Mile
Higher

AQUIFLOW **52045**

Site ID:	083601353T
Groundwater Flow:	SSE
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	36.29
Date:	03/25/1999

4
NNE
1/8 - 1/4 Mile
Lower

FED USGS **USGS40000141002**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340554117160201		
Monloc name:	001S004W11K001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0983454
Longitude:	-117.2680977	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1034.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	670
Welldepth units:	ft	Wellholedepth:	670
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

B5
NNW
1/4 - 1/2 Mile
Lower

CA WELLS **CADW60000001462**

Objectid:	1462
Latitude:	34.0986
Longitude:	-117.27
Site code:	340986N1172700W005
State well numbe:	01S04W11K006S
Local well name:	”
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino

Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001462

B6
NNW **CA WELLS** **CADW60000001461**
1/4 - 1/2 Mile
Lower

Objectid:	1461
Latitude:	34.0986
Longitude:	-117.27
Site code:	340986N1172700W003
State well numbe:	01S04W11K004S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001461

B7
NNW **CA WELLS** **CADW60000001460**
1/4 - 1/2 Mile
Lower

Objectid:	1460
Latitude:	34.0986
Longitude:	-117.27
Site code:	340986N1172700W002
State well numbe:	01S04W11K003S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001460

B8
NNW **CA WELLS** **CADW60000015539**
1/4 - 1/2 Mile
Lower

Objectid:	15539
Latitude:	34.0986
Longitude:	-117.27
Site code:	340986N1172700W001
State well numbe:	01S04W11K002S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000015539

B9
NNW **CA WELLS** **CADW60000015630**
1/4 - 1/2 Mile
Lower

Objectid:	15630
Latitude:	34.0986
Longitude:	-117.27
Site code:	340986N1172700W007
State well numbe:	01S04W11K008S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000015630

B10
NNW **CA WELLS** **CADW60000015541**
1/4 - 1/2 Mile
Lower

Objectid:	15541
Latitude:	34.0986
Longitude:	-117.27
Site code:	340986N1172700W006
State well numbe:	01S04W11K007S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino

Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000015541

B11
NNW **CA WELLS** **CADW60000015540**
1/4 - 1/2 Mile
Lower

Objectid:	15540
Latitude:	34.0986
Longitude:	-117.27
Site code:	340986N1172700W004
State well numbe:	01S04W11K005S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000015540

B12
NNW **FED USGS** **USGS40000141011**
1/4 - 1/2 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340555117161203		
Monloc name:	001S004W11K004S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0986111
Longitude:	-117.27	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1030
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	20021206	Welldepth:	120
Welldepth units:	ft	Wellholedepth:	600
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 18

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2005-01-27	82.10		2005-01-05	82.63	
2004-11-22	82.00		2004-10-23	81.44	
2004-09-15	80.37		2004-08-11	78.69	
2004-07-16	77.50		2004-06-16	76.11	
2004-05-12	74.62		2004-04-22	73.61	
2004-04-08	73.50		2004-03-18	73.15	
2004-03-03	72.68		2004-02-20	73.16	
2004-01-28	73.12		2004-01-22	74.11	
2003-12-16	72.97		2003-11-18	72.28	

B13
NNW **FED USGS** **USGS40000141010**
1/4 - 1/2 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340555117161202		
Monloc name:	001S004W11K003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0986111
Longitude:	-117.27	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1030
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	20021206	Welldepth:	155
Welldepth units:	ft	Wellholedepth:	600
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 18

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2005-01-27	83.78		2005-01-05	84.36	
2004-11-22	83.97		2004-10-23	83.49	
2004-09-15	82.57		2004-08-11	80.80	
2004-07-16	79.52		2004-06-16	77.87	
2004-05-12	76.18		2004-04-22	74.90	
2004-04-08	74.78		2004-03-18	74.47	
2004-03-03	73.79		2004-02-20	74.46	
2004-01-28	74.52		2004-01-22	74	
2003-12-16	74.59		2003-11-18	74.09	

Map ID Direction Distance Elevation	Database	EDR ID Number
B14 **NNW** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40000141009**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340555117161201		
Monloc name:	001S004W11K002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0986111
Longitude:	-117.27	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1030
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	20021206	Welldepth:	250
Welldepth units:	ft	Wellholedepth:	600
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 18

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2005-01-27	87.01		2005-01-05	88.07	
2004-11-22	88.66		2004-10-23	88.64	
2004-09-15	89.23		2004-08-11	87.32	
2004-07-16	85.86		2004-06-16	83.42	
2004-05-12	81.15		2004-04-22	78.20	
2004-04-08	78.26		2004-03-18	78.13	
2004-03-03	75.91		2004-02-20	77.83	
2004-01-28	78.14		2004-01-22	77.89	
2003-12-16	76.88		2003-11-18	78.40	

	Database	EDR ID Number
B15 **NNW** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40000141014**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340555117161206		
Monloc name:	001S004W11K007S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0986111
Longitude:	-117.27	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1030
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	20021206	Welldepth:	840
Welldepth units:	ft	Wellholedepth:	1508
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 18

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2005-01-27	118.65		2005-01-05	121.81	
2004-11-22	133.08		2004-10-23	131.82	
2004-09-15	162.70		2004-08-11	160.98	
2004-07-16	159.39		2004-06-16	151.97	
2004-05-12	145.62		2004-04-22	114.83	
2004-04-08	126.13		2004-03-18	129.14	
2004-03-03	98.07		2004-02-20	121.29	
2004-01-28	123.92		2004-01-22	119.08	
2003-12-16	121.53		2003-11-18	128.74	

B16
NNW
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000141015**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340555117161207		
Monloc name:	001S004W11K008S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0986111
Longitude:	-117.27	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1030
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	20021206	Welldepth:	555
Welldepth units:	ft	Wellholedepth:	1508
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 18

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2005-01-27	116.00		2005-01-05	117.46	
2004-11-22	125.57		2004-10-23	127.56	
2004-09-15	147.45		2004-08-11	146.31	
2004-07-16	143.92		2004-06-16	137.89	
2004-05-12	130.96		2004-04-22	105.06	
2004-04-08	115.59		2004-03-18	119.73	
2004-03-03	93.13		2004-02-20	113.30	
2004-01-28	116.16		2004-01-22	113.11	
2003-12-16	113.03		2003-11-18	118.82	

B17
NNW
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000141012**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340555117161204		
Monloc name:	001S004W11K005S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0986111
Longitude:	-117.27	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1030
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	20021206	Welldepth:	85
Welldepth units:	ft	Wellholedepth:	600
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 18

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2005-01-27	66.85		2005-01-05	71.60	
2004-11-22	70.59		2004-10-23	72.17	
2004-09-15	71.39		2004-08-11	70.34	
2004-07-16	69.49		2004-06-16	68.42	
2004-05-12	67.45		2004-04-22	66.97	
2004-04-08	66.72		2004-03-18	66.26	
2004-03-03	66.82		2004-02-20	67.20	
2004-01-28	66.94		2004-01-22	67.07	
2003-12-16	67.26		2003-11-18	66.83	

Map ID Direction Distance Elevation	Database	EDR ID Number
B18 **NNW** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40000141013**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340555117161205		
Monloc name:	001S004W11K006S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0986111
Longitude:	-117.27	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1030
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	20021206	Welldepth:	1290
Welldepth units:	ft	Wellholedepth:	1508
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 19

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2005-01-27	109.67		2005-01-05	113.78	
2004-11-22	123.40		2004-11-04	116.22	
2004-10-23	127.90		2004-09-15	148.19	
2004-08-11	144.77		2004-07-16	143.20	
2004-06-16	137.33		2004-05-12	129.48	
2004-04-22	110.02		2004-04-08	115.02	
2004-03-18	111.69		2004-03-03	93.67	
2004-02-20	111.17		2004-01-28	110.71	
2004-01-22	109.29		2003-12-16	113.09	
2003-11-18	121.82				

C19 **ESE** **1/4 - 1/2 Mile** **Higher**	**CA WELLS**	**CADW60000017698**

Objectid:	17698
Latitude:	34.0934
Longitude:	-117.264
Site code:	340934N1172640W001
State well numbe:	01S04W11R001S
Local well name:	”
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino

Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000017698

20
SSW
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000140871**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340526117161601		
Monloc name:	001S004W14C00AS		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0905679
Longitude:	-117.2719867	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1032.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19510101	Welldepth:	117
Welldepth units:	ft	Wellholedepth:	125
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1951-12-14	18.00	

D21
NNE
1/4 - 1/2 Mile
Higher

CA WELLS **858**

Water System Information:

Prime Station Code:	01S/04W-02K03 S	User ID:	TAN
FRDS Number:	3610039010	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340600.0 1171600.0	Precision:	Undefined
Source Name:	ANTIL WELL 04		

System Number: 3610039
System Name: SAN BERNARDINO CITY
Organization That Operates System:
P.O. BOX 710,
SAN BERNARDINO, CA 92402
Pop Served: 139789 Connections: 39453
Area Served: SAN BERNARDINO

D22
NNE **CA WELLS** **857**
1/4 - 1/2 Mile
Higher

Water System Information:

Prime Station Code:	01S/04W-02K02 S	User ID:	TAN
FRDS Number:	3610039011	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340600.0 1171600.0	Precision:	Undefined
Source Name:	ANTIL WELL 05		
System Number:	3610039		
System Name:	SAN BERNARDINO CITY		
Organization That Operates System:			
	P.O. BOX 710,		
	SAN BERNARDINO, CA 92402		
Pop Served:	139789	Connections:	39453
Area Served:	SAN BERNARDINO		

D23
NNE **CA WELLS** **859**
1/4 - 1/2 Mile
Higher

Water System Information:

Prime Station Code:	01S/04W-02K08 S	User ID:	TAN
FRDS Number:	3610039012	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340600.0 1171600.0	Precision:	Undefined
Source Name:	ANTIL WELL 06		
System Number:	3610039		
System Name:	SAN BERNARDINO CITY		
Organization That Operates System:			
	P.O. BOX 710,		
	SAN BERNARDINO, CA 92402		
Pop Served:	139789	Connections:	39453
Area Served:	SAN BERNARDINO		
Sample Collected:	31-JAN-11	Findings:	8.2 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	24-NOV-14	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	24-NOV-14	Findings:	7.4 UG/L
Chemical:	PERCHLORATE		

Sample Collected:	01-DEC-14	Findings:	720. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	01-DEC-14	Findings:	7.9
Chemical:	PH, LABORATORY		
Sample Collected:	01-DEC-14	Findings:	100. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	01-DEC-14	Findings:	130. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	01-DEC-14	Findings:	240. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	01-DEC-14	Findings:	85. MG/L
Chemical:	CALCIUM		
Sample Collected:	01-DEC-14	Findings:	7.7 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	01-DEC-14	Findings:	56. MG/L
Chemical:	SODIUM		
Sample Collected:	01-DEC-14	Findings:	5.2 MG/L
Chemical:	POTASSIUM		
Sample Collected:	01-DEC-14	Findings:	35. MG/L
Chemical:	CHLORIDE		
Sample Collected:	01-DEC-14	Findings:	180. MG/L
Chemical:	SULFATE		
Sample Collected:	01-DEC-14	Findings:	0.4 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	01-DEC-14	Findings:	2.6 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	01-DEC-14	Findings:	490. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	01-DEC-14	Findings:	0.51
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	01-DEC-14	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-DEC-14	Findings:	2.6 UG/L
Chemical:	CARBON DIOXIDE		
Sample Collected:	01-DEC-14	Findings:	12.2
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	01-DEC-14	Findings:	7.4 UG/L
Chemical:	PERCHLORATE		

D24
NNE **CA WELLS** **866**
1/4 - 1/2 Mile
Higher

Water System Information:

Prime Station Code:	01S/04W-02Q09 S	User ID:	TAN
FRDS Number:	3610064017	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340600.0 1171600.0	Precision:	Undefined
Source Name:	WELL 011A		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

System Number: 3610064
System Name: EAST VALLEY WD
Organization That Operates System:
PO BOX 3427
SAN BERNARDINO, CA 92413

Pop Served:	55000	Connections:	18303
Area Served:	SAN BERNARDINO VIC		
Sample Collected:	23-FEB-11	Findings:	1.2 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	23-FEB-11	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	22-MAR-11	Findings:	2.4 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	22-MAR-11	Findings:	0.41 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	22-MAR-11	Findings:	2.4 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	22-MAR-11	Findings:	0.88 PCI/L
Chemical:	URANIUM MDA95		
Sample Collected:	22-JUL-11	Findings:	280. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	22-JUL-11	Findings:	54. MG/L
Chemical:	SODIUM		
Sample Collected:	22-JUL-11	Findings:	48. MG/L
Chemical:	CHLORIDE		
Sample Collected:	22-JUL-11	Findings:	240. MG/L
Chemical:	SULFATE		
Sample Collected:	22-JUL-11	Findings:	560. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	22-JUL-11	Findings:	17. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-AUG-11	Findings:	1.2 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	03-AUG-11	Findings:	560. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	05-JUN-12	Findings:	290. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	05-JUN-12	Findings:	100. MG/L
Chemical:	CALCIUM		
Sample Collected:	05-JUN-12	Findings:	9.1 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	05-JUN-12	Findings:	57. MG/L
Chemical:	SODIUM		
Sample Collected:	05-JUN-12	Findings:	48. MG/L
Chemical:	CHLORIDE		

Sample Collected:	05-JUN-12	Findings:	270. MG/L
Chemical:	SULFATE		
Sample Collected:	05-JUN-12	Findings:	580. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	05-JUN-12	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-JUN-13	Findings:	31.8 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	04-JUN-13	Findings:	840. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	04-JUN-13	Findings:	7.6
Chemical:	PH, FIELD		
Sample Collected:	04-JUN-13	Findings:	7.7
Chemical:	PH, LABORATORY		
Sample Collected:	04-JUN-13	Findings:	76. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	04-JUN-13	Findings:	93. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	04-JUN-13	Findings:	310. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	04-JUN-13	Findings:	110. MG/L
Chemical:	CALCIUM		
Sample Collected:	04-JUN-13	Findings:	9.4 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	04-JUN-13	Findings:	53. MG/L
Chemical:	SODIUM		
Sample Collected:	04-JUN-13	Findings:	5.3 MG/L
Chemical:	POTASSIUM		
Sample Collected:	04-JUN-13	Findings:	47. MG/L
Chemical:	CHLORIDE		
Sample Collected:	04-JUN-13	Findings:	260. MG/L
Chemical:	SULFATE		
Sample Collected:	04-JUN-13	Findings:	0.39 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	04-JUN-13	Findings:	720. UG/L
Chemical:	BORON		
Sample Collected:	04-JUN-13	Findings:	1.2 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	04-JUN-13	Findings:	9.9 UG/L
Chemical:	VANADIUM		
Sample Collected:	04-JUN-13	Findings:	600. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	04-JUN-13	Findings:	0.67
Chemical:	LANGELIER INDEX @ 60 C		

Sample Collected:	04-JUN-13	Findings:	0.24
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	04-JUN-13	Findings:	18. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-JUN-13	Findings:	0.2 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	04-JUN-13	Findings:	11.91
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	04-JUN-13	Findings:	4100. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	04-AUG-15	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		

D25
NNE **CA WELLS** **865**
1/4 - 1/2 Mile
Higher

Water System Information:

Prime Station Code:	01S/04W-02Q08 S	User ID:	TAN
FRDS Number:	3610064018	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340600.0 1171600.0	Precision:	Undefined
Source Name:	WELL 012A		
System Number:	3610064		
System Name:	EAST VALLEY WD		
Organization That Operates System:			
	PO BOX 3427		
	SAN BERNARDINO, CA 92413		
Pop Served:	55000	Connections:	18303
Area Served:	SAN BERNARDINO VIC		
Sample Collected:	23-FEB-11	Findings:	3.5 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	23-FEB-11	Findings:	18. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	22-MAR-11	Findings:	0.94 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	22-MAR-11	Findings:	0.42 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	22-MAR-11	Findings:	0.98 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	22-MAR-11	Findings:	0.87 PCI/L
Chemical:	URANIUM MDA95		
Sample Collected:	24-JUN-11	Findings:	7.4 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	26-JUL-11	Findings:	160. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		

Sample Collected:	26-JUL-11	Findings:	18. MG/L
Chemical:	SODIUM		
Sample Collected:	26-JUL-11	Findings:	12. MG/L
Chemical:	CHLORIDE		
Sample Collected:	26-JUL-11	Findings:	36. MG/L
Chemical:	SULFATE		
Sample Collected:	26-JUL-11	Findings:	5.6 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	26-JUL-11	Findings:	240. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	26-JUL-11	Findings:	22. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	28-JUL-11	Findings:	1.1 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	28-JUL-11	Findings:	0.1 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	17-NOV-11	Findings:	7.7 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	28-FEB-12	Findings:	7.9 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	19-JUN-12	Findings:	180. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	19-JUN-12	Findings:	56. MG/L
Chemical:	CALCIUM		
Sample Collected:	19-JUN-12	Findings:	9.8 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	19-JUN-12	Findings:	21. MG/L
Chemical:	SODIUM		
Sample Collected:	19-JUN-12	Findings:	14. MG/L
Chemical:	CHLORIDE		
Sample Collected:	19-JUN-12	Findings:	44. MG/L
Chemical:	SULFATE		
Sample Collected:	19-JUN-12	Findings:	300. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	19-JUN-12	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	19-JUN-12	Findings:	8.1 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	24-JUL-12	Findings:	1. UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-DEC-12	Findings:	8.6 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	09-JAN-13	Findings:	9.9 UG/L
Chemical:	PERCHLORATE		

Sample Collected:	26-FEB-13	Findings:	0.77 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	17-APR-13	Findings:	10. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	16-JUL-13	Findings:	8.9 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	16-OCT-13	Findings:	9.8 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	11-DEC-13	Findings:	18.2 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	11-DEC-13	Findings:	460. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	11-DEC-13	Findings:	6.7
Chemical:	PH, FIELD		
Sample Collected:	11-DEC-13	Findings:	7.6
Chemical:	PH, LABORATORY		
Sample Collected:	11-DEC-13	Findings:	130. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	11-DEC-13	Findings:	160. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	11-DEC-13	Findings:	180. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	11-DEC-13	Findings:	55. MG/L
Chemical:	CALCIUM		
Sample Collected:	11-DEC-13	Findings:	9.8 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	11-DEC-13	Findings:	22. MG/L
Chemical:	SODIUM		
Sample Collected:	11-DEC-13	Findings:	3.3 MG/L
Chemical:	POTASSIUM		
Sample Collected:	11-DEC-13	Findings:	16. MG/L
Chemical:	CHLORIDE		
Sample Collected:	11-DEC-13	Findings:	49. MG/L
Chemical:	SULFATE		
Sample Collected:	11-DEC-13	Findings:	0.49 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	11-DEC-13	Findings:	5.8 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	11-DEC-13	Findings:	4.4 UG/L
Chemical:	VANADIUM		
Sample Collected:	11-DEC-13	Findings:	0.69 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	11-DEC-13	Findings:	300. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		

Sample Collected:	11-DEC-13	Findings:	- 0.26
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	11-DEC-13	Findings:	- 0.89
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	11-DEC-13	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-DEC-13	Findings:	10.95
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	11-DEC-13	Findings:	6600. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	11-DEC-13	Findings:	12. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	22-JAN-14	Findings:	11. UG/L
Chemical:	PERCHLORATE		

C26
ESE
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000140921**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340536117154401		
Monloc name:	001S004W11R001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0933456
Longitude:	-117.2630975	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1048.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19140101	Welldepth:	187
Welldepth units:	ft	Wellholedepth:	187
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 135

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1943-02-05	5.20		1942-12-21	9.40	
1942-10-26	10.80		1942-09-09	10.90	
1942-08-10	10.70		1942-07-01	9.30	
1942-05-06	6.20		1942-04-01	5.80	
1942-02-17	5.60		1942-01-15	3.30	
1941-12-15	5.20		1941-11-13	6.00	
1941-09-29	8.70		1941-08-25	8.00	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1941-07-15	6.80	
1941-03-14	3.30	
1941-01-22	5.90	
1940-10-25	13.30	
1940-08-27	12.80	
1940-06-27	11.30	
1940-04-23	7.80	
1940-02-23	4.90	
1939-12-28	9.90	
1939-10-25	11.00	
1939-08-30	11.50	
1939-07-01	10.00	
1939-04-25	7.00	
1939-02-24	4.00	
1939-01-04	6.10	
1938-11-30	10.40	
1938-10-24	10.70	
1938-08-30	10.50	
1938-06-24	7.20	
1938-04-28	10.20	
1938-02-24	8.40	
1937-12-28	10.50	
1937-10-26	16.40	
1937-08-26	15.80	
1937-07-02	13.80	
1937-05-01	12.10	
1937-03-04	14.20	
1937-01-04	19.40	
1936-11-02	21.60	
1936-09-02	30.40	
1936-06-29	24.10	
1936-04-30	19.70	
1936-03-02	16.70	
1936-01-02	22.50	
1935-10-02	24.30	
1935-08-02	22.10	
1935-05-08	17.50	
1935-03-13	14.10	
1935-01-16	17.00	
1934-11-05	23.10	
1934-09-04	24.90	
1934-06-06	20.70	
1934-04-06	17.80	
1934-02-07	13.90	
1933-11-07	19.80	
1933-09-06	21.20	
1933-07-07	19.10	
1933-05-01	15.00	
1933-03-09	11.90	
1933-01-04	11.30	
1932-09-17	19.60	
1932-06-06	13.00	
1932-04-02	11.00	
1932-02-05	10.40	
1931-11-16	16.90	

Date	Feet below Surface	Feet to Sealevel
1941-06-02	5.30	
1941-02-26	5.00	
1940-12-06	10.80	
1940-09-26	13.50	
1940-07-22	13.00	
1940-05-23	10.10	
1940-03-21	7.00	
1940-01-25	5.80	
1939-11-30	10.90	
1939-09-28	11.00	
1939-07-31	10.40	
1939-05-23	9.60	
1939-03-23	6.50	
1939-01-23	4.40	
1938-12-27	6.80	
1938-11-07	10.80	
1938-09-27	12.60	
1938-07-26	9.80	
1938-06-01	7.40	
1938-03-31	6.10	
1938-01-26	11.20	
1937-12-02	16.50	
1937-09-27	16.50	
1937-08-02	15.10	
1937-06-02	12.60	
1937-04-06	19.20	
1937-01-30	17.00	
1936-12-02	22.10	
1936-10-01	29.90	
1936-07-30	25.90	
1936-06-02	22.10	
1936-03-30	18.40	
1936-02-04	21.40	
1935-12-02	24.00	
1935-09-03	23.30	
1935-06-01	19.40	
1935-04-09	13.90	
1935-02-11	15.30	
1934-12-06	20.90	
1934-10-04	27.90	
1934-06-28	22.10	
1934-05-09	18.90	
1934-03-05	12.30	
1934-01-03	13.70	
1933-10-06	20.00	
1933-08-05	21.60	
1933-06-07	17.70	
1933-04-10	14.80	
1933-02-13	8.60	
1932-11-18	18.70	
1932-08-16	18.80	
1932-05-09	12.80	
1932-03-07	8.80	
1932-01-04	11.80	
1931-10-05	18.80	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1931-09-02	17.70		1931-08-03	18.90	
1931-07-02	16.90		1931-06-03	15.80	
1931-05-04	14.50		1931-04-01	14.10	
1931-03-10	9.70		1916-04-04	1.20	
1915-12-15	3.10		1915-06-09	2.10	
1915-04-14	1.20				

E27
NNW
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000141041**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340600117161201		
Monloc name:	001S004W11F004S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.100012
Longitude:	-117.2708756	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1035.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19540101	Welldepth:	230
Welldepth units:	ft	Wellholedepth:	242
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1954-07-26	10.00	

E28
NNW
1/4 - 1/2 Mile
Lower

CA WELLS **CADW60000017695**

Objectid:	17695
Latitude:	34.1
Longitude:	-117.2718
Site code:	341000N1172718W001
State well numbe:	01S04W11F004S
Local well name:	”
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino

Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000017695

29
South **FED USGS** **USGS40000140854**
1/4 - 1/2 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340522117160901		
Monloc name:	001S004W14C003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0894568
Longitude:	-117.2700421	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1037.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19130101	Welldepth:	450
Welldepth units:	ft	Wellholedepth:	450
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

30
North **FED USGS** **USGS40000141053**
1/4 - 1/2 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340603117160501		
Monloc name:	001S004W11G002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1008453
Longitude:	-117.268931	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1042.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19350101	Welldepth:	54
Welldepth units:	ft	Wellholedepth:	54
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

D31
NNE **FED USGS** **USGS40000141052**
1/4 - 1/2 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340603117155801		
Monloc name:	001S004W11G001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1008453
Longitude:	-117.2669866	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1046.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19500101	Welldepth:	205
Welldepth units:	ft	Wellholedepth:	705
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

32
NNE **FED USGS** **USGS40000141061**
1/4 - 1/2 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340605117160001		
Monloc name:	001S004W11G00AS		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1014008
Longitude:	-117.2675421	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1046.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19500101	Welldepth:	75
Welldepth units:	ft	Wellholedepth:	78
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1950-08-03	14.00	

F33
NNE
1/4 - 1/2 Mile
Higher

CA WELLS **CADW60000017696**

Objectid:	17696
Latitude:	34.1011
Longitude:	-117.2662
Site code:	341011N1172662W001
State well numbe:	01S04W11H001S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000017696

G34
NW
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000141028**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340558117162801		
Monloc name:	001S004W11E009S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0994564
Longitude:	-117.2753202	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1038.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19350101	Welldepth:	102
Welldepth units:	ft	Wellholedepth:	122
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1951-03-06	13.90	

F35
NNE
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000141058**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340604117155201		
Monloc name:	001S004W11H001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1011231
Longitude:	-117.2653198	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1053.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	1147
Welldepth units:	ft	Wellholedepth:	1147
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 32

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1971-06-16	74.10		1971-06-01	74.00	
1970-03-23	72.30		1969-11-12	87.70	
1969-04-24	89.00		1969-01-07	115.40	
1968-04-17	103.00		1967-11-27	106.70	
1966-09-23	113.00		1966-02-09	97.20	
1965-11-24	103.50		1965-11-10	105.30	
1965-05-05	92.60		1965-04-06	91.00	
1965-02-10	95.50		1964-11-18	91.60	
1963-01-10	79.20		1962-03-07	53.60	
1961-12-12	61.70		1961-09-19	83.70	
1960-12-06	51.20		1960-06-14	54.90	
1959-12-15	44.00		1959-09-02	57.80	
1959-06-09	43.20		1959-03-30	35.90	
1959-01-06	29.20		1958-05-13	28.20	
1958-03-11	19.70		1958-01-16	29.20	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1957-11-22	33.70		1957-09-26	57.40	

H36
East
1/4 - 1/2 Mile
Higher

CA WELLS **CADW60000017700**

Objectid:	17700
Latitude:	34.0953
Longitude:	-117.2607
Site code:	340953N1172607W001
State well numbe:	01S04W12N001S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000017700

G37
NW
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000141026**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340557117163001		
Monloc name:	001S004W11E010S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0991787
Longitude:	-117.2758758	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1037.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19220101	Welldepth:	178
Welldepth units:	ft	Wellholedepth:	313
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

Map ID Direction Distance Elevation	Database	EDR ID Number
38 **North** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000141077**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340608117160901		
Monloc name:	001S004W11F001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1022341
Longitude:	-117.2700422	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1045.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19050101	Welldepth:	1050
Welldepth units:	ft	Wellholedepth:	1050
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

---

39 **NW** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS40000141054**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340603117162501		
Monloc name:	001S004W11E00BS		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1008453
Longitude:	-117.2744868	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1038.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19460101	Welldepth:	85
Welldepth units:	ft	Wellholedepth:	102
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1946	10.50	

G40
NW
1/2 - 1 Mile
Lower

CA WELLS **CADW60000016177**

Objectid:	16177
Latitude:	34.0995
Longitude:	-117.2762
Site code:	340995N1172762W001
State well numbe:	01S04W11E009S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000016177

I41
South
1/2 - 1 Mile
Lower

FED USGS **USGS40000140833**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340515117161101		
Monloc name:	001S004W14F008S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0875125
Longitude:	-117.2705977	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1033.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19510101	Welldepth:	124
Welldepth units:	ft	Wellholedepth:	125
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1951-08-09	32.00	

J42
WSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000140915**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340534117163701		
Monloc name:	001S004W11N003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.09279
Longitude:	-117.2778202	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1018.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19580101	Welldepth:	140
Welldepth units:	ft	Wellholedepth:	144
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1958-07-16	21.50	

I43
SSW
1/2 - 1 Mile
Lower

CA WELLS **CADW60000032710**

Objectid:	32710
Latitude:	34.0875
Longitude:	-117.2715
Site code:	340875N1172715W001
State well numbe:	01S04W14F008S
Local well name:	”
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino

Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000032710

H44
East
1/2 - 1 Mile
Higher

FED USGS **USGS40000140962**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340543117153201		
Monloc name:	001S004W12N001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.09529
Longitude:	-117.259764	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1056.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19180101	Welldepth:	166
Welldepth units:	ft	Wellholedepth:	166
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 55

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1939-12-21	8.90		1931-10-03	10.80	
1931-10-02	10.80		1931-10-01	10.80	
1931-09-29	10.70		1931-09-26	10.70	
1931-09-25	10.70		1931-09-24	10.70	
1931-09-23	10.70		1931-09-22	10.60	
1931-09-21	10.60		1931-09-19	10.60	
1931-09-17	10.60		1931-09-16	10.50	
1931-09-15	10.50		1931-09-12	10.30	
1931-09-11	10.30		1931-09-10	10.30	
1931-09-09	10.20		1931-09-08	10.20	
1931-09-07	10.10		1931-09-05	10.10	
1931-09-04	10.00		1931-09-03	10.00	
1931-09-02	10.00		1931-09-01	9.90	
1931-08-31	9.80		1931-08-29	10.60	
1931-08-28	10.60		1931-08-27	10.60	
1931-08-26	10.50		1931-08-25	10.50	
1931-08-24	10.40		1931-08-22	10.40	
1931-08-21	10.40		1931-08-20	10.00	
1931-08-19	10.30		1931-08-18	10.20	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1931-08-17	10.30		1931-08-15	10.30	
1931-08-14	10.20		1931-08-13	10.20	
1931-08-12	10.30		1931-08-11	10.10	
1931-08-10	10.20		1931-08-08	10.20	
1931-08-07	10.10		1931-08-06	10.00	
1931-08-05	10.00		1931-08-04	10.00	
1931-08-03	10.00		1931-08-01	9.90	
1931-07-31	10.00		1931-07-30	9.70	
1931-07-29	9.20				

K45
NW
1/2 - 1 Mile
Lower

FED USGS **USGS40000141029**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340558117163401		
Monloc name:	001S004W11E001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0994564
Longitude:	-117.2769869	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1032.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19220101	Welldepth:	70
Welldepth units:	ft	Wellholedepth:	70
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1922	6.50	

K46
NW
1/2 - 1 Mile
Lower

FED USGS **USGS40000141030**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340558117163402		
Monloc name:	001S004W11E012S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0994564
Longitude:	-117.2769869	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1032.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19530101	Welldepth:	59
Welldepth units:	ft	Wellholedepth:	104
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1953-12-04	19.50	

L47
ESE
1/2 - 1 Mile
Higher

CA WELLS **CADW60000001693**

Objectid:	1693
Latitude:	34.092
Longitude:	-117.2601
Site code:	340920N1172601W001
State well numbe:	01S04W13D006S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001693

M48
ENE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140990**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340552117153201		
Monloc name:	001S004W12M001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0977899
Longitude:	-117.259764	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1057.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19400101	Welldepth:	147
Welldepth units:	ft	Wellholedepth:	285
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

J49
WSW
1/2 - 1 Mile
Lower

CA WELLS **CADW60000017697**

Objectid:	17697
Latitude:	34.0928
Longitude:	-117.2787
Site code:	340928N1172787W001
State well numbe:	01S04W11N003S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000017697

J50
WSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000140896**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340531117163901		
Monloc name:	001S004W14D001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0919567
Longitude:	-117.2783758	Sourcemap scale:	Not Reported

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1014.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19540101	Welldepth:	170
Welldepth units:	ft	Wellholedepth:	170
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1954-02-26	2.17	

N51
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000140999**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340553117163901		
Monloc name:	001S004W11M00AS		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0980676
Longitude:	-117.2783758	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1028.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19490101	Welldepth:	45
Welldepth units:	ft	Wellholedepth:	59
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1949-03-25	12.00	

L52
ESE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140907**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340533117153101		
Monloc name:	001S004W12N002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0925123
Longitude:	-117.2594862	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1057.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19360101	Welldepth:	102
Welldepth units:	ft	Wellholedepth:	102
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

53
West
1/2 - 1 Mile
Lower

FED USGS **USGS40000140938**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340539117164201		
Monloc name:	001S004W10R002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0941788
Longitude:	-117.2792092	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1020.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19220101	Welldepth:	258
Welldepth units:	ft	Wellholedepth:	399
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

Map ID Direction Distance Elevation	Database	EDR ID Number
L54 **ESE** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**CADW60000001694**

Objectid:	1694
Latitude:	34.0917
Longitude:	-117.2596
Site code:	340917N1172596W001
State well numbe:	01S04W13D011S
Local well name:	”
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001694

K55 **WNW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADW60000001687**

Objectid:	1687
Latitude:	34.0995
Longitude:	-117.2779
Site code:	340995N1172779W002
State well numbe:	01S04W11E012S
Local well name:	”
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001687

K56 **WNW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADW60000017694**

Objectid:	17694
Latitude:	34.0995
Longitude:	-117.2779
Site code:	340995N1172779W001
State well numbe:	01S04W11E001S
Local well name:	”
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino

Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000017694

M57
ENE **CA WELLS** **901**
1/2 - 1 Mile
Higher

Water System Information:

Prime Station Code:	01S/04W-13N02 S	User ID:	WAT
FRDS Number:	3310031032	County:	Riverside
District Number:	14	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340551.2 1171530.0	Precision:	10 Feet (1/10 Second)
Source Name:	GAGE WELL 29-3		
System Number:	3310031		
System Name:	Riverside, City of		
Organization That Operates System:			
	3900 MAIN STREET RIVERSIDE, CA 92522		
Pop Served:	245000	Connections:	58586
Area Served:	RIVERSIDE		
Sample Collected:	14-APR-11	Findings:	7.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	14-APR-11	Findings:	38. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-APR-11	Findings:	17. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	14-APR-11	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	10-MAY-11	Findings:	29. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	10-MAY-11	Findings:	4.1 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	10-MAY-11	Findings:	33. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	10-MAY-11	Findings:	8.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	10-MAY-11	Findings:	36. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-AUG-13	Findings:	14. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	09-AUG-13	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		

Sample Collected:	20-SEP-13	Findings:	29. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	20-SEP-13	Findings:	6.4 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	20-SEP-13	Findings:	26. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	20-SEP-13	Findings:	1.3e-002 UG/L
Chemical:	DIBROMOCHLOROPROPANE (DBCP)		
Sample Collected:	20-SEP-13	Findings:	3. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	20-SEP-13	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	20-SEP-13	Findings:	13. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	20-SEP-13	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	27-SEP-13	Findings:	0.25 PCI/L
Chemical:	RADIUM 226 COUNTING ERROR		
Sample Collected:	27-SEP-13	Findings:	0.45 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	27-SEP-13	Findings:	0.93 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	11-OCT-13	Findings:	22. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	11-OCT-13	Findings:	4.9 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	11-OCT-13	Findings:	29. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	10-MAY-11	Findings:	18. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	10-MAY-11	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	09-JUN-11	Findings:	13.3 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	09-JUN-11	Findings:	2.43 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	09-JUN-11	Findings:	30. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	09-JUN-11	Findings:	1.5e-002 UG/L
Chemical:	DIBROMOCHLOROPROPANE (DBCP)		
Sample Collected:	09-JUN-11	Findings:	8.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	09-JUN-11	Findings:	36. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	09-JUN-11	Findings:	16. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	05-AUG-11	Findings:	22. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	05-AUG-11	Findings:	3.8 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	05-AUG-11	Findings:	31. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	11-OCT-13	Findings:	2.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	11-OCT-13	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-OCT-13	Findings:	14. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	11-OCT-13	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	21-NOV-13	Findings:	20. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	21-NOV-13	Findings:	6.1 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	21-NOV-13	Findings:	25. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	21-NOV-13	Findings:	3.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	21-NOV-13	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-AUG-11	Findings:	5.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-AUG-11	Findings:	36. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-AUG-11	Findings:	17. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	05-AUG-11	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	01-SEP-11	Findings:	0.357 PCI/L
Chemical:	RADIUM 226 COUNTING ERROR		
Sample Collected:	01-SEP-11	Findings:	34. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	01-SEP-11	Findings:	4.4 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	01-SEP-11	Findings:	0.49 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	01-SEP-11	Findings:	31. PCI/L
Chemical:	URANIUM (PCI/L)		

Sample Collected:	21-NOV-13	Findings:	14. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	21-NOV-13	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	05-FEB-14	Findings:	23. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	05-FEB-14	Findings:	4.5 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	05-FEB-14	Findings:	0.18 PCI/L
Chemical:	RADIUM 226 COUNTING ERROR		
Sample Collected:	05-FEB-14	Findings:	30. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	05-FEB-14	Findings:	1.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-FEB-14	Findings:	31. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-FEB-14	Findings:	15. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	05-FEB-14	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	05-FEB-14	Findings:	0.37 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	05-FEB-14	Findings:	0.86 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	09-MAY-14	Findings:	690. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	09-MAY-14	Findings:	7.8
Chemical:	PH, LABORATORY		
Sample Collected:	09-MAY-14	Findings:	190. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	09-MAY-14	Findings:	240. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	09-MAY-14	Findings:	300. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	09-MAY-14	Findings:	93. MG/L
Chemical:	CALCIUM		
Sample Collected:	01-SEP-11	Findings:	1.1e-002 UG/L
Chemical:	DIBROMOCHLOROPROPANE (DBCP)		
Sample Collected:	01-SEP-11	Findings:	5.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-SEP-11	Findings:	33. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-SEP-11	Findings:	16. UG/L
Chemical:	PERCHLORATE		

Sample Collected:	01-SEP-11	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	01-SEP-11	Findings:	0.49 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	06-OCT-11	Findings:	21. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	06-OCT-11	Findings:	3.8 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	06-OCT-11	Findings:	31. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	06-OCT-11	Findings:	5.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-OCT-11	Findings:	33. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-MAY-14	Findings:	16. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	09-MAY-14	Findings:	28. MG/L
Chemical:	SODIUM		
Sample Collected:	09-MAY-14	Findings:	3.3 MG/L
Chemical:	POTASSIUM		
Sample Collected:	09-MAY-14	Findings:	16. MG/L
Chemical:	CHLORIDE		
Sample Collected:	09-MAY-14	Findings:	80. MG/L
Chemical:	SULFATE		
Sample Collected:	09-MAY-14	Findings:	0.46 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	09-MAY-14	Findings:	16. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	09-MAY-14	Findings:	3.8 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	09-MAY-14	Findings:	0.22 PCI/L
Chemical:	RADIUM 226 COUNTING ERROR		
Sample Collected:	09-MAY-14	Findings:	30. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	09-MAY-14	Findings:	1.e-002 UG/L
Chemical:	DIBROMOCHLOROPROPANE (DBCP)		
Sample Collected:	09-MAY-14	Findings:	1.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	09-MAY-14	Findings:	420. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	09-MAY-14	Findings:	1.2
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	09-MAY-14	Findings:	35. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	06-OCT-11	Findings:	16. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	06-OCT-11	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	02-NOV-11	Findings:	26. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	02-NOV-11	Findings:	3.9 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	02-NOV-11	Findings:	27. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	02-NOV-11	Findings:	5.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-NOV-11	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-NOV-11	Findings:	15. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	02-NOV-11	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	08-DEC-11	Findings:	19. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	08-DEC-11	Findings:	3.5 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	08-DEC-11	Findings:	0.61 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	08-DEC-11	Findings:	27. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	09-MAY-14	Findings:	13.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	09-MAY-14	Findings:	7900. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	09-MAY-14	Findings:	20. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	09-MAY-14	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	09-MAY-14	Findings:	0.42 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	09-MAY-14	Findings:	0.93 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	23-DEC-14	Findings:	31. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	23-DEC-14	Findings:	4.6 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	23-DEC-14	Findings:	0.14 PCI/L
Chemical:	RADIUM 226 COUNTING ERROR		

Sample Collected:	23-DEC-14	Findings:	0.3 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	23-DEC-14	Findings:	29. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	23-DEC-14	Findings:	1.2e-002 UG/L
Chemical:	DIBROMOCHLOROPROPANE (DBCP)		
Sample Collected:	23-DEC-14	Findings:	1.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	23-DEC-14	Findings:	37. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-DEC-11	Findings:	1.2e-002 UG/L
Chemical:	DIBROMOCHLOROPROPANE (DBCP)		
Sample Collected:	08-DEC-11	Findings:	7. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	08-DEC-11	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-DEC-11	Findings:	14. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	08-DEC-11	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	08-DEC-11	Findings:	0.6 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	11-JAN-12	Findings:	26. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	11-JAN-12	Findings:	4.1 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	11-JAN-12	Findings:	27. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	11-JAN-12	Findings:	8.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	11-JAN-12	Findings:	33. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	23-DEC-14	Findings:	5.4e-002 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	23-DEC-14	Findings:	20. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	23-DEC-14	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	23-DEC-14	Findings:	0.33 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	23-DEC-14	Findings:	0.64 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	15-JAN-15	Findings:	18. PCI/L
Chemical:	GROSS ALPHA		

Sample Collected:	15-JAN-15	Findings:	4.3 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	15-JAN-15	Findings:	36. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	15-JAN-15	Findings:	1.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	15-JAN-15	Findings:	34. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	15-JAN-15	Findings:	19. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	15-JAN-15	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	11-FEB-15	Findings:	18. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	11-FEB-15	Findings:	4.3 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	11-FEB-15	Findings:	31. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	11-JAN-12	Findings:	14. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	11-JAN-12	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	13-APR-12	Findings:	23. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	13-APR-12	Findings:	3.9 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	13-APR-12	Findings:	0.16 PCI/L
Chemical:	RADIUM 226 COUNTING ERROR		
Sample Collected:	13-APR-12	Findings:	31. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	13-APR-12	Findings:	1.6e-002 UG/L
Chemical:	DIBROMOCHLOROPROPANE (DBCP)		
Sample Collected:	13-APR-12	Findings:	2.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	13-APR-12	Findings:	35. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-APR-12	Findings:	20. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	13-APR-12	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	13-APR-12	Findings:	0.41 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	13-APR-12	Findings:	0.9 PCI/L
Chemical:	RADIUM 228 MDA95		

Sample Collected:	17-MAY-12	Findings:	17. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	17-MAY-12	Findings:	3.7 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	17-MAY-12	Findings:	25. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	11-FEB-15	Findings:	2.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	11-FEB-15	Findings:	31. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-FEB-15	Findings:	16. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	11-FEB-15	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	04-MAR-15	Findings:	11. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	04-MAR-15	Findings:	3.9 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	04-MAR-15	Findings:	30. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	04-MAR-15	Findings:	4.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-MAR-15	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	17-MAY-12	Findings:	3.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	17-MAY-12	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	17-MAY-12	Findings:	15. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	17-MAY-12	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	14-JUN-12	Findings:	21. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	14-JUN-12	Findings:	3.8 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	14-JUN-12	Findings:	0.13 PCI/L
Chemical:	RADIUM 226 COUNTING ERROR		
Sample Collected:	14-JUN-12	Findings:	0.3 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	14-JUN-12	Findings:	27. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	04-MAR-15	Findings:	14. UG/L
Chemical:	PERCHLORATE		

Sample Collected:	04-MAR-15	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	03-APR-15	Findings:	21. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	03-APR-15	Findings:	4.5 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	03-APR-15	Findings:	27. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	03-APR-15	Findings:	8.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-APR-15	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-APR-15	Findings:	13. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	03-APR-15	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	01-MAY-15	Findings:	12. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	01-MAY-15	Findings:	3.8 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	01-MAY-15	Findings:	29. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	14-JUN-12	Findings:	1.2e-002 UG/L
Chemical:	DIBROMOCHLOROPROPANE (DBCP)		
Sample Collected:	14-JUN-12	Findings:	3.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	14-JUN-12	Findings:	3.6 UG/L
Chemical:	PICLORAM		
Sample Collected:	14-JUN-12	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-JUN-12	Findings:	14. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	14-JUN-12	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	14-JUN-12	Findings:	0.35 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	14-JUN-12	Findings:	0.57 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	26-JUL-12	Findings:	25. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	26-JUL-12	Findings:	4. PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	26-JUL-12	Findings:	26. PCI/L
Chemical:	URANIUM (PCI/L)		

Sample Collected:	01-MAY-15	Findings:	10. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-MAY-15	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-MAY-15	Findings:	12. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	01-MAY-15	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	04-JUN-15	Findings:	14. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	04-JUN-15	Findings:	4.2 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	04-JUN-15	Findings:	31. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	04-JUN-15	Findings:	11. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-JUN-15	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	26-JUL-12	Findings:	3.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	26-JUL-12	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	26-JUL-12	Findings:	14. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	26-JUL-12	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	23-AUG-12	Findings:	1.4 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	23-AUG-12	Findings:	20. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	23-AUG-12	Findings:	3.9 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	23-AUG-12	Findings:	26. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	23-AUG-12	Findings:	1.2e-002 UG/L
Chemical:	DIBROMOCHLOROPROPANE (DBCP)		
Sample Collected:	23-AUG-12	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	23-AUG-12	Findings:	14. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	23-AUG-12	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	23-AUG-12	Findings:	0.41 PCI/L
Chemical:	RADIUM 226 MDA95		

Sample Collected:	23-AUG-12	Findings:	0.71 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	14-SEP-12	Findings:	1.3 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	14-SEP-12	Findings:	17. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	14-SEP-12	Findings:	3.6 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	14-SEP-12	Findings:	26. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	14-SEP-12	Findings:	4.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-JUN-15	Findings:	12. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	04-JUN-15	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	16-JUL-15	Findings:	33. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	16-JUL-15	Findings:	0.42 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	16-JUL-15	Findings:	33. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	16-JUL-15	Findings:	9.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	16-JUL-15	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	16-JUL-15	Findings:	13. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	14-SEP-12	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-SEP-12	Findings:	13. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	14-SEP-12	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	21-SEP-12	Findings:	3.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	30-NOV-12	Findings:	16. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	30-NOV-12	Findings:	3.5 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	30-NOV-12	Findings:	0.14 PCI/L
Chemical:	RADIUM 226 COUNTING ERROR		
Sample Collected:	16-JUL-15	Findings:	1.4 PCI/L
Chemical:	GROSS ALPHA MDA95		

Sample Collected:	07-AUG-15	Findings:	35. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	07-AUG-15	Findings:	0.43 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	07-AUG-15	Findings:	27. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	07-AUG-15	Findings:	8.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-AUG-15	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-AUG-15	Findings:	12. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	07-AUG-15	Findings:	1.4 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	17-SEP-15	Findings:	27. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	17-SEP-15	Findings:	0.35 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	17-SEP-15	Findings:	27. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	30-NOV-12	Findings:	24. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	30-NOV-12	Findings:	1.3e-002 UG/L
Chemical:	DIBROMOCHLOROPROPANE (DBCP)		
Sample Collected:	30-NOV-12	Findings:	2.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	30-NOV-12	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	30-NOV-12	Findings:	16. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	30-NOV-12	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	30-NOV-12	Findings:	0.37 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	30-NOV-12	Findings:	0.8 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	21-DEC-12	Findings:	26. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	21-DEC-12	Findings:	4.2 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	21-DEC-12	Findings:	0.3 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	21-DEC-12	Findings:	27. PCI/L
Chemical:	URANIUM (PCI/L)		

Sample Collected:	17-SEP-15	Findings:	11. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	17-SEP-15	Findings:	31. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	17-SEP-15	Findings:	12. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	17-SEP-15	Findings:	1.5 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	17-SEP-15	Findings:	0.37 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	17-SEP-15	Findings:	0.76 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	22-OCT-15	Findings:	6.6 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	22-OCT-15	Findings:	28. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	22-OCT-15	Findings:	9.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	22-OCT-15	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	21-DEC-12	Findings:	1.2e-002 UG/L
Chemical:	DIBROMOCHLOROPROPANE (DBCP)		
Sample Collected:	21-DEC-12	Findings:	2.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	21-DEC-12	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	21-DEC-12	Findings:	14. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	21-DEC-12	Findings:	3.2 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	21-DEC-12	Findings:	0.41 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	21-DEC-12	Findings:	0.62 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	16-JAN-13	Findings:	24. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	16-JAN-13	Findings:	3.9 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	16-JAN-13	Findings:	26. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	16-JAN-13	Findings:	3.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	16-JAN-13	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	22-OCT-15	Findings:	11. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	23-OCT-15	Findings:	30. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	23-OCT-15	Findings:	0.39 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	23-OCT-15	Findings:	1.7 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	09-DEC-15	Findings:	6.6 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	09-DEC-15	Findings:	16. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	09-DEC-15	Findings:	4. PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	09-DEC-15	Findings:	25. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	09-DEC-15	Findings:	12. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	09-DEC-15	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	16-JAN-13	Findings:	14. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	16-JAN-13	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	14-JUN-13	Findings:	650. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	14-JUN-13	Findings:	7.8
Chemical:	PH, LABORATORY		
Sample Collected:	14-JUN-13	Findings:	210. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	14-JUN-13	Findings:	260. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	14-JUN-13	Findings:	280. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	14-JUN-13	Findings:	86. MG/L
Chemical:	CALCIUM		
Sample Collected:	14-JUN-13	Findings:	15. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	14-JUN-13	Findings:	29. MG/L
Chemical:	SODIUM		
Sample Collected:	14-JUN-13	Findings:	3.3 MG/L
Chemical:	POTASSIUM		
Sample Collected:	14-JUN-13	Findings:	16. MG/L
Chemical:	CHLORIDE		

Sample Collected:	14-JUN-13	Findings:	72. MG/L
Chemical:	SULFATE		
Sample Collected:	14-JUN-13	Findings:	0.46 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	14-JUN-13	Findings:	13. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	14-JUN-13	Findings:	3.5 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	14-JUN-13	Findings:	30. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	14-JUN-13	Findings:	1.4e-002 UG/L
Chemical:	DIBROMOCHLOROPROPANE (DBCP)		
Sample Collected:	09-DEC-15	Findings:	10. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	09-DEC-15	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	09-DEC-15	Findings:	0.41 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	09-DEC-15	Findings:	0.96 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	07-JAN-16	Findings:	6.2 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-JAN-16	Findings:	13. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	07-JAN-16	Findings:	3.7 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	07-JAN-16	Findings:	27. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	07-JAN-16	Findings:	8. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-JAN-16	Findings:	11. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	07-JAN-16	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	14-JUN-13	Findings:	2. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	14-JUN-13	Findings:	410. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	14-JUN-13	Findings:	1.1
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	14-JUN-13	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-JUN-13	Findings:	13.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		

Sample Collected:	14-JUN-13	Findings:	6900. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	14-JUN-13	Findings:	15. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	14-JUN-13	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	14-JUN-13	Findings:	0.42 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	14-JUN-13	Findings:	0.93 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	11-JUL-13	Findings:	12. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	11-JUL-13	Findings:	3.4 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	11-JUL-13	Findings:	26. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	18-MAR-11	Findings:	0.112 PCI/L
Chemical:	RADIUM 226 COUNTING ERROR		
Sample Collected:	18-MAR-11	Findings:	21. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	18-MAR-11	Findings:	3.6 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	18-MAR-11	Findings:	0.45 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	18-MAR-11	Findings:	33. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	18-MAR-11	Findings:	1.3e-002 UG/L
Chemical:	DIBROMOCHLOROPROPANE (DBCP)		
Sample Collected:	18-MAR-11	Findings:	2.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	18-MAR-11	Findings:	38. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	18-MAR-11	Findings:	22. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	18-MAR-11	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	18-MAR-11	Findings:	0.53 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	22-MAR-11	Findings:	37. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-APR-11	Findings:	33. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	14-APR-11	Findings:	4.2 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		

Sample Collected:	14-APR-11	Findings:	32. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	11-JUL-13	Findings:	2.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	11-JUL-13	Findings:	420. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11-JUL-13	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-JUL-13	Findings:	15. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	11-JUL-13	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	09-AUG-13	Findings:	22. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	09-AUG-13	Findings:	5.2 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	09-AUG-13	Findings:	26. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	09-AUG-13	Findings:	2.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	09-AUG-13	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		

L58
ESE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140895**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340531117153001		
Monloc name:	001S004W13D006S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0919568
Longitude:	-117.2592085	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1059.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19360101	Welldepth:	100
Welldepth units:	ft	Wellholedepth:	102
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1939-09-20	27.80	

59
NW
1/2 - 1 Mile
Lower

FED USGS **USGS40000141055**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340603117163401		
Monloc name:	001S004W11E00AS		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1008453
Longitude:	-117.2769869	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1033.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19490101	Welldepth:	98
Welldepth units:	ft	Wellholedepth:	111
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1949	7.50	

N60
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000140991**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340552117164201		
Monloc name:	001S004W10J003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0977898
Longitude:	-117.2792092	Sourcemap scale:	Not Reported

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1026.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19190101	Welldepth:	50
Welldepth units:	ft	Wellholedepth:	110
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

61
North **FED USGS** **USGS40000141099**
1/2 - 1 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340614117160901		
Monloc name:	001S004W11B001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1039007
Longitude:	-117.2700423	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1045.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19030101	Welldepth:	984
Welldepth units:	ft	Wellholedepth:	984
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

62
WSW **CA WELLS** **CADW60000032709**
1/2 - 1 Mile
Lower

Objectid:	32709
Latitude:	34.092
Longitude:	-117.2793
Site code:	340920N1172793W001
State well numbe:	01S04W14D001S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino

Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000032709

O63
ESE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140881**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340528117153001		
Monloc name:	001S004W13D002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0911235
Longitude:	-117.2592084	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1062.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19230101	Welldepth:	109
Welldepth units:	ft	Wellholedepth:	109
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

N64
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000141016**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340555117164201		
Monloc name:	001S004W10J002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0986231
Longitude:	-117.2792092	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1026.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19240101	Welldepth:	75
Welldepth units:	ft	Wellholedepth:	75
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

O65
ESE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140890**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340530117152801		
Monloc name:	001S004W13D011S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0916791
Longitude:	-117.2586529	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1061.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19570101	Welldepth:	164
Welldepth units:	ft	Wellholedepth:	170
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1957-11-18	70.00	

66
South
1/2 - 1 Mile
Higher

FED USGS **USGS40000140800**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340508117160001		
Monloc name:	001S004W14G001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0855681
Longitude:	-117.267542	Sourcemap scale:	Not Reported

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1038.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19420101	Welldepth:	110
Welldepth units:	ft	Wellholedepth:	115
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

P67
SSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000140821**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340511117162401		
Monloc name:	001S004W14F004S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0864014
Longitude:	-117.2742089	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1025.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	80
Welldepth units:	ft	Wellholedepth:	80
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1953	25.00	

68
West
1/2 - 1 Mile
Lower

FED USGS **USGS40000140982**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340547117164701		
Monloc name:	001S004W10J005S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.096401
Longitude:	-117.2805981	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1020.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19420101	Welldepth:	66
Welldepth units:	ft	Wellholedepth:	85
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

69
SSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000140798**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340507117161401		
Monloc name:	001S004W14F00AS		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0852903
Longitude:	-117.271431	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1029.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19460101	Welldepth:	288
Welldepth units:	ft	Wellholedepth:	322
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

Map ID Direction Distance Elevation	Database	EDR ID Number
70 **NW** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS40000141059**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340604117163901		
Monloc name:	001S004W11E004S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.101123
Longitude:	-117.2783759	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1030.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19370101	Welldepth:	160
Welldepth units:	ft	Wellholedepth:	160
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

P71 **SSW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADW60000018156**

Objectid:	18156
Latitude:	34.0864
Longitude:	-117.2751
Site code:	340864N1172751W001
State well numbe:	01S04W14F004S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000018156

Q72 **ENE** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**CADW60000001691**

Objectid:	1691
Latitude:	34.0989
Longitude:	-117.2579
Site code:	340989N1172579W001
State well numbe:	01S04W12L001S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001691

R73
ESE **CA WELLS** **CADW60000017703**
1/2 - 1 Mile
Higher

Objectid:	17703
Latitude:	34.0922
Longitude:	-117.2573
Site code:	340922N1172573W001
State well numbe:	01S04W13D007S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000017703

S74
SSW **FED USGS** **USGS40000140790**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340506117161901		
Monloc name:	001S004W14F009S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0850126
Longitude:	-117.27282	Sourcemap scale:	Not Reported

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1026.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19510101	Welldepth:	118
Welldepth units:	ft	Wellholedepth:	128
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1951-07-26	27.00	

75
SE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140832**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340515117153401		
Monloc name:	001S004W13E008S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0875125
Longitude:	-117.2603196	Sourcemap scale:	Not Reported
Horiz Acc measure:	Unknown	Horiz Acc measure units:	Unknown
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

S76
SSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000140791**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340506117162201		
Monloc name:	001S004W14L001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0850126
Longitude:	-117.2736534	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1024.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19500101	Welldepth:	196
Welldepth units:	ft	Wellholedepth:	225
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1950-07-31	24.00	

S77
SSW
1/2 - 1 Mile
Lower

CA WELLS **CADW60000018157**

Objectid:	18157
Latitude:	34.085
Longitude:	-117.2737
Site code:	340850N1172737W001
State well numbe:	01S04W14F009S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000018157

T78
NNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000141100**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340614117163101		
Monloc name:	001S004W11D00AS		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1039007
Longitude:	-117.2761536	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1035.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19000101	Welldepth:	580
Welldepth units:	ft	Wellholedepth:	580
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

Q79
ENE
1/2 - 1 Mile
Higher

FED USGS **USGS40000141008**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340555117152201		
Monloc name:	001S004W12L00AS		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0986232
Longitude:	-117.2569862	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1065.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19520101	Welldepth:	1100
Welldepth units:	ft	Wellholedepth:	1124
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 2

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1953-02	3.00		1952-11-15	18.00	

80
East
1/2 - 1 Mile
Higher

FED USGS **USGS40000140961**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340543117151901		
Monloc name:	001S004W12N003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.09529
Longitude:	-117.2561528	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1062.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19350101	Welldepth:	99
Welldepth units:	ft	Wellholedepth:	99
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

U81
WSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000140891**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340530117165001		
Monloc name:	001S004W15A005S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0916789
Longitude:	-117.2814315	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1005.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19610101	Welldepth:	95
Welldepth units:	ft	Wellholedepth:	100
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1961-05-12	48.00	

Q82
ENE
1/2 - 1 Mile
Higher

FED USGS **USGS40000141021**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340556117152201		
Monloc name:	001S004W12L001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.098901
Longitude:	-117.2569862	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1065.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19200101	Welldepth:	232
Welldepth units:	ft	Wellholedepth:	282
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 43

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1941-10-02	5.10		1941-09-05	6.50	
1941-08-01	5.80		1941-01-06	0.50	
1940-12-02	8.50		1940-11-05	10.60	
1940-10-04	14.70		1940-08-31	14.50	
1940-08-06	13.60		1940-07-05	12.40	
1940-06-05	9.60		1940-05-02	6.60	
1940-03-23	5.20		1940-01-04	5.40	
1939-12-02	7.80		1939-11-02	10.10	
1939-10-02	9.40		1939-09-01	12.40	
1939-08-03	11.40		1939-06-02	8.60	
1939-05-04	5.60		1939-03-31	1.20	
1938-12-02	8.10		1938-11-07	8.10	
1938-10-31	8.10		1938-09-30	10.00	
1938-08-31	9.40		1938-08-04	9.70	
1938-06-03	0.50		1938-05-02	5.00	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1938-02-03	5.30		1938-01-05	6.40	
1937-11-30	14.50		1937-11-10	15.90	
1937-10-02	16.70		1937-09-02	17.00	
1937-08-01	15.60		1937-06-26	13.70	
1937-05-29	6.30		1937-05-01	7.90	
1937-03-30	4.20		1937-02-25	9.10	
1937-01-29	14.40				

R83
ESE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140903**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340532117152001		
Monloc name:	001S004W13D007S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0922346
Longitude:	-117.2564306	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1065.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19380101	Welldepth:	140
Welldepth units:	ft	Wellholedepth:	140
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 2

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1939-08-22	22.20		1938-08-19	20.65	

V84
SSW
1/2 - 1 Mile
Lower

CA WELLS **CADW60000001614**

Objectid:	1614
Latitude:	34.0856
Longitude:	-117.2758
Site code:	340856N1172758W004
State well numbe:	01S04W14E011S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino

Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001614

V85
SSW **CA WELLS** **CADW60000001471**
1/2 - 1 Mile
Lower

Objectid:	1471
Latitude:	34.0856
Longitude:	-117.2758
Site code:	340856N1172758W002
State well numbe:	01S04W14E009S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001471

V86
SSW **CA WELLS** **CADW60000001470**
1/2 - 1 Mile
Lower

Objectid:	1470
Latitude:	34.0856
Longitude:	-117.2758
Site code:	340856N1172758W001
State well numbe:	01S04W14E008S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001470

V87
SSW **CA WELLS** **CADW60000015632**
1/2 - 1 Mile
Lower

Objectid:	15632
Latitude:	34.0856
Longitude:	-117.2758
Site code:	340856N1172758W005
State well numbe:	01S04W14E012S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000015632

V88
SSW **CA WELLS** **CADW60000015631**
1/2 - 1 Mile
Lower

Objectid:	15631
Latitude:	34.0856
Longitude:	-117.2758
Site code:	340856N1172758W003
State well numbe:	01S04W14E010S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000015631

V89
SSW **CA WELLS** **CADW60000001615**
1/2 - 1 Mile
Lower

Objectid:	1615
Latitude:	34.0856
Longitude:	-117.2758
Site code:	340856N1172758W006
State well numbe:	01S04W14E013S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino

Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001615

V90
SSW **FED USGS** **USGS40000140802**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340508117163302		
Monloc name:	001S004W14E009S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0855556
Longitude:	-117.2758333	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1020
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	20030303	Welldepth:	810
Welldepth units:	ft	Wellholedepth:	818
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 18

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2005-01-27	101.52		2005-01-06	113.29	
2004-11-22	115.01		2004-10-23	113.77	
2004-09-15	142.97		2004-08-11	149.23	
2004-07-16	148.70		2004-06-16	139.81	
2004-05-12	135.33		2004-04-22	98.50	
2004-04-08	107.27		2004-03-23	121.06	
2004-03-03	83.01		2004-02-20	103.61	
2004-02-05	101.16		2004-01-22	100.99	
2003-12-16	106.33		2003-11-18	107.39	

V91
SSW **FED USGS** **USGS40000140801**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340508117163301		
Monloc name:	001S004W14E008S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0855556
Longitude:	-117.2758333	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1020
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	20030210	Welldepth:	1165
Welldepth units:	ft	Wellholedepth:	1506
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 18

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2005-01-27	108.24		2005-01-06	115.78	
2004-11-22	130.53		2004-10-23	123.58	
2004-09-15	168.26		2004-08-11	167.06	
2004-07-16	166.62		2004-06-16	156.94	
2004-05-12	152.74		2004-04-22	116.81	
2004-04-08	124.58		2004-03-23	127.06	
2004-03-03	94.30		2004-02-20	114.59	
2004-02-05	110.04		2004-01-22	111.59	
2003-12-16	120.75		2003-11-18	127.08	

V92
SSW **FED USGS** **USGS40000140805**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340508117163305		
Monloc name:	001S004W14E012S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0855556
Longitude:	-117.2758333	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1020
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	20030303	Welldepth:	100
Welldepth units:	ft	Wellholedepth:	818
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 19

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2005-01-27	80.77		2005-01-06	81.54	
2004-12-09	81.67		2004-11-22	81.44	
2004-10-23	80.87		2004-09-15	78.85	
2004-08-11	76.42		2004-07-16	74.62	
2004-06-16	72.70		2004-05-12	70.87	
2004-04-22	69.64		2004-04-08	69.51	
2004-03-23	69.34		2004-03-03	68.86	
2004-02-20	69.39		2004-02-05	69.78	
2004-01-22	69.97		2003-12-16	70.38	
2003-11-18	70.28				

V93
SSW **FED USGS** **USGS40000140806**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340508117163306		
Monloc name:	001S004W14E013S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0855556
Longitude:	-117.2758333	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1020
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	20030303	Welldepth:	55
Welldepth units:	ft	Wellholedepth:	818
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 18

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2005-01-27	46.25		2005-01-06	46.26	
2004-11-22	46.23		2004-10-23	46.22	
2004-09-15	46.20		2004-08-11	46.17	
2004-07-16	46.15		2004-06-16	46.15	
2004-05-12	46.13		2004-04-22	46.27	
2004-04-08	46.25		2004-03-23	46.22	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2004-03-03	46.24		2004-02-20	46.19	
2004-02-05	46.13		2004-01-22	46.20	
2003-12-16	46.19				
2003-11-18					

Note: The site was dry (no water level recorded).

V94
SSW **FED USGS** **USGS40000140803**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340508117163303		
Monloc name:	001S004W14E010S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0855556
Longitude:	-117.2758333	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1020
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	20030303	Welldepth:	480
Welldepth units:	ft	Wellholedepth:	818
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 18

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2005-01-27	89.93		2005-01-06	96.56	
2004-11-22	99.42		2004-10-23	98.68	
2004-09-15	115.53		2004-08-11	117.60	
2004-07-16	116.95		2004-06-16	110.13	
2004-05-12	106.52		2004-04-22	84.99	
2004-04-08	87.92		2004-03-23	95.99	
2004-03-03	74.56		2004-02-20	87.99	
2004-02-05	86.78		2004-01-22	85.40	
2003-12-16	89.93		2003-11-18	89.43	

V95
SSW **FED USGS** **USGS40000140804**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340508117163304		
Monloc name:	001S004W14E011S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0855556
Longitude:	-117.2758333	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1020
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	20030303	Welldepth:	250
Welldepth units:	ft	Wellholedepth:	818
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 18

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2005-01-27	81.69		2005-01-06	83.41	
2004-11-22	84.95		2004-10-23	84.95	
2004-09-15	86.36		2004-08-11	84.32	
2004-07-16	82.59		2004-06-16	79.52	
2004-05-12	76.33		2004-04-22	72.83	
2004-04-08	72.46		2004-03-23	73.42	
2004-03-03	69.93		2004-02-20	72.14	
2004-02-05	72.47		2004-01-22	72.63	
2003-12-16	73.79		2003-11-18	73.96	

W96
West
1/2 - 1 Mile
Lower

FED USGS **USGS40000140963**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340543117165301		
Monloc name:	001S004W10R003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0952899
Longitude:	-117.2822648	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1017.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19260101	Welldepth:	435
Welldepth units:	ft	Wellholedepth:	435
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

97
SSW
1/2 - 1 Mile
Lower

CA WELLS **CADW60000032711**

Objectid:	32711
Latitude:	34.085
Longitude:	-117.2746
Site code:	340850N1172746W001
State well numbe:	01S04W14L001S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000032711

R98
ESE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140914**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340534117151901		
Monloc name:	001S004W12P002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0927901
Longitude:	-117.2561528	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1063.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19300101	Welldepth:	210
Welldepth units:	ft	Wellholedepth:	220
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

Map ID Direction Distance Elevation	Database	EDR ID Number
X99 **ESE** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**CADW60000017702**

Objectid:	17702
Latitude:	34.0903
Longitude:	-117.2571
Site code:	340903N1172571W001
State well numbe:	01S04W13C001S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000017702

W100 **West** **1/2 - 1 Mile** **Lower**		**FED USGS**	**USGS40000140983**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340547117165301		
Monloc name:	001S004W10J004S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0964009
Longitude:	-117.2822648	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1017.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19190101	Welldepth:	247
Welldepth units:	ft	Wellholedepth:	247
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

W101 **West** **1/2 - 1 Mile** **Lower**		**FED USGS**	**USGS40000140964**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340543117165401		
Monloc name:	001S004W10R00AS		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0952899
Longitude:	-117.2825426	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1012.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19440101	Welldepth:	137
Welldepth units:	ft	Wellholedepth:	150
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

102
NNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000141122**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340619117162701		
Monloc name:	001S004W11D001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1052895
Longitude:	-117.2750424	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1035.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19130101	Welldepth:	946
Welldepth units:	ft	Wellholedepth:	946
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

Map ID Direction Distance Elevation	Database	EDR ID Number
U103 **WSW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADW60000018161**

Objectid:	18161
Latitude:	34.0917
Longitude:	-117.2823
Site code:	340917N1172823W001
State well numbe:	01S04W15A005S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000018161

T104 **NW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**891**

Water System Information:

Prime Station Code:	01S/04W-11D03 S	User ID:	WAT
FRDS Number:	3310031008	County:	Riverside
District Number:	14	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340615.1 1171635.6	Precision:	Undefined
Source Name:	COOLEY I		
System Number:	3310031		
System Name:	Riverside, City of		
Organization That Operates System:			
	3900 MAIN STREET RIVERSIDE, CA 92522		
Pop Served:	245000	Connections:	58586
Area Served:	RIVERSIDE		
Sample Collected:	01-SEP-11	Findings:	2.4 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	01-SEP-11	Findings:	1.6 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	01-SEP-11	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-SEP-11	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		

Sample Collected:	13-SEP-12	Findings:	3.4 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	13-SEP-12	Findings:	2.3 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	13-SEP-12	Findings:	1.4 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	13-SEP-12	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-SEP-12	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	07-AUG-13	Findings:	450. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	07-AUG-13	Findings:	7.8
Chemical:	PH, LABORATORY		
Sample Collected:	07-AUG-13	Findings:	130. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	07-AUG-13	Findings:	160. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	07-AUG-13	Findings:	180. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	07-AUG-13	Findings:	58. MG/L
Chemical:	CALCIUM		
Sample Collected:	07-AUG-13	Findings:	8.1 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	07-AUG-13	Findings:	23. MG/L
Chemical:	SODIUM		
Sample Collected:	07-AUG-13	Findings:	2.9 MG/L
Chemical:	POTASSIUM		
Sample Collected:	07-AUG-13	Findings:	17. MG/L
Chemical:	CHLORIDE		
Sample Collected:	07-AUG-13	Findings:	48. MG/L
Chemical:	SULFATE		
Sample Collected:	07-AUG-13	Findings:	0.45 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	07-AUG-13	Findings:	4.5 UG/L
Chemical:	VANADIUM		
Sample Collected:	07-AUG-13	Findings:	2.9 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	07-AUG-13	Findings:	1.5 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	07-AUG-13	Findings:	290. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	07-AUG-13	Findings:	0.76
Chemical:	LANGELIER INDEX @ 60 C		

Sample Collected:	07-AUG-13	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-AUG-13	Findings:	4200. UG/L
Chemical:	CARBON DIOXIDE		
Sample Collected:	07-AUG-13	Findings:	9.7e-002 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	07-AUG-13	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	07-AUG-13	Findings:	3300. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	07-AUG-13	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	05-SEP-13	Findings:	2.2 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	05-SEP-13	Findings:	1.7 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	05-SEP-13	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-SEP-13	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	10-SEP-14	Findings:	4.8 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	10-SEP-14	Findings:	3.2 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	10-SEP-14	Findings:	1.5 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	10-SEP-14	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-SEP-14	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	08-JUL-15	Findings:	13. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	25-SEP-15	Findings:	2.7 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	25-SEP-15	Findings:	1.7 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	25-SEP-15	Findings:	17. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	25-SEP-15	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	18-DEC-15	Findings:	3.4 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	18-DEC-15	Findings:	2.8 UG/L
Chemical:	ARSENIC		

Sample Collected:	18-DEC-15	Findings:	3.5 UG/L
Chemical:	MOLYDBENDUM		
Sample Collected:	18-DEC-15	Findings:	5.6 UG/L
Chemical:	VANADIUM		
Sample Collected:	18-DEC-15	Findings:	3.8 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	18-DEC-15	Findings:	3.1 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	18-DEC-15	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	18-DEC-15	Findings:	3400. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	18-DEC-15	Findings:	4.1 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	18-DEC-15	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		

Y105
SSE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140797**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340507117153801		
Monloc name:	001S004W14H001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0852904
Longitude:	-117.2614307	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1052.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19450101	Welldepth:	136
Welldepth units:	ft	Wellholedepth:	150
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

T106
NW
1/2 - 1 Mile
Lower

CA WELLS **890**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Water System Information:

Prime Station Code:	01S/04W-11D02 S	User ID:	WAT
FRDS Number:	3310031007	County:	Riverside
District Number:	14	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340616.4 1171635.9	Precision:	10 Feet (1/10 Second)
Source Name:	COOLEY H		
System Number:	3310031		
System Name:	Riverside, City of		
Organization That Operates System:			
	3900 MAIN STREET RIVERSIDE, CA 92522		
Pop Served:	245000	Connections:	58586
Area Served:	RIVERSIDE		
Sample Collected:	01-JUL-11	Findings:	11. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-JUL-11	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	14-JUN-12	Findings:	420. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	14-JUN-12	Findings:	8.3
Chemical:	PH, LABORATORY		
Sample Collected:	14-JUN-12	Findings:	100. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	14-JUN-12	Findings:	120. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	14-JUN-12	Findings:	110. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	14-JUN-12	Findings:	38. MG/L
Chemical:	CALCIUM		
Sample Collected:	14-JUN-12	Findings:	4.1 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	14-JUN-12	Findings:	36. MG/L
Chemical:	SODIUM		
Sample Collected:	14-JUN-12	Findings:	3. MG/L
Chemical:	POTASSIUM		
Sample Collected:	14-JUN-12	Findings:	15. MG/L
Chemical:	CHLORIDE		
Sample Collected:	14-JUN-12	Findings:	57. MG/L
Chemical:	SULFATE		
Sample Collected:	14-JUN-12	Findings:	0.5 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	14-JUN-12	Findings:	3.6 UG/L
Chemical:	ARSENIC		
Sample Collected:	14-JUN-12	Findings:	5.1 UG/L
Chemical:	VANADIUM		

Sample Collected:	14-JUN-12	Findings:	2.5 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	14-JUN-12	Findings:	280. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	14-JUN-12	Findings:	0.97
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	14-JUN-12	Findings:	11. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-JUN-12	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	14-JUN-12	Findings:	2600. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	14-JUN-12	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	05-APR-13	Findings:	500. UNITS
Chemical:	COLOR		
Sample Collected:	05-APR-13	Findings:	4. TON
Chemical:	ODOR THRESHOLD @ 60 C		
Sample Collected:	05-APR-13	Findings:	340. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	05-APR-13	Findings:	8.
Chemical:	PH, LABORATORY		
Sample Collected:	05-APR-13	Findings:	110. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	05-APR-13	Findings:	130. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	05-APR-13	Findings:	130. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	05-APR-13	Findings:	43. MG/L
Chemical:	CALCIUM		
Sample Collected:	05-APR-13	Findings:	5. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	05-APR-13	Findings:	27. MG/L
Chemical:	SODIUM		
Sample Collected:	05-APR-13	Findings:	2.7 MG/L
Chemical:	POTASSIUM		
Sample Collected:	05-APR-13	Findings:	7.9 MG/L
Chemical:	CHLORIDE		
Sample Collected:	05-APR-13	Findings:	36. MG/L
Chemical:	SULFATE		
Sample Collected:	05-APR-13	Findings:	120000. UG/L
Chemical:	IRON		
Sample Collected:	05-APR-13	Findings:	420. UG/L
Chemical:	MANGANESE		

Sample Collected:	05-APR-13	Findings:	130. UG/L
Chemical:	ZINC		
Sample Collected:	05-APR-13	Findings:	440. UG/L
Chemical:	ALUMINUM		
Sample Collected:	05-APR-13	Findings:	210. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	05-APR-13	Findings:	0.77
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	05-APR-13	Findings:	4.3 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-APR-13	Findings:	100. NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	05-APR-13	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	05-APR-13	Findings:	970. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	05-JUN-13	Findings:	0.69 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	05-JUN-13	Findings:	420. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	05-JUN-13	Findings:	8.3
Chemical:	PH, LABORATORY		
Sample Collected:	05-JUN-13	Findings:	110. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	05-JUN-13	Findings:	130. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	05-JUN-13	Findings:	120. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	05-JUN-13	Findings:	41. MG/L
Chemical:	CALCIUM		
Sample Collected:	05-JUN-13	Findings:	4.3 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	05-JUN-13	Findings:	43. MG/L
Chemical:	SODIUM		
Sample Collected:	05-JUN-13	Findings:	3.2 MG/L
Chemical:	POTASSIUM		
Sample Collected:	05-JUN-13	Findings:	16. MG/L
Chemical:	CHLORIDE		
Sample Collected:	05-JUN-13	Findings:	58. MG/L
Chemical:	SULFATE		
Sample Collected:	05-JUN-13	Findings:	0.56 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	05-JUN-13	Findings:	3.6 UG/L
Chemical:	ARSENIC		

Sample Collected:	05-JUN-13	Findings:	6.1 UG/L
Chemical:	VANADIUM		
Sample Collected:	05-JUN-13	Findings:	250. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	05-JUN-13	Findings:	1.
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	05-JUN-13	Findings:	10. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-JUN-13	Findings:	0.15 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	05-JUN-13	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	05-JUN-13	Findings:	2400. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	05-JUN-14	Findings:	3.8 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	05-JUN-14	Findings:	3.1 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	05-JUN-14	Findings:	12. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-JUN-14	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	31-JUL-14	Findings:	3.8 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	29-DEC-14	Findings:	6.1 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	04-JUN-15	Findings:	2.5 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	04-JUN-15	Findings:	12. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-JUN-15	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	08-JUL-15	Findings:	13. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-OCT-15	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-JUN-11	Findings:	1.17 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	09-JUN-11	Findings:	10. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-JUL-11	Findings:	2.2 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		

Z107
South
1/2 - 1 Mile
Higher

CA WELLS **906**

Water System Information:

Prime Station Code:	01S/04W-14H03 S	User ID:	TAN
FRDS Number:	3610067002	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Abandoned
Source Lat/Long:	340500.0 1171600.0	Precision:	Undefined
Source Name:	SUNNYSIDE WELL - ABANDONED		
System Number:	3610067		
System Name:	SOUTH SAN BERNARDINO CWD - NORTH		
Organization That Operates System:			
	882 S TIPPECANOE AVE		
	SAN BERNARDINO 92408		
Pop Served:	600	Connections:	191
Area Served:	SOUTH SAN BERNARDINO		

Z108
South **CA WELLS** **907**
1/2 - 1 Mile
Higher

Water System Information:

Prime Station Code:	01S/04W-14J05 S	User ID:	TAN
FRDS Number:	3610067001	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Inactive Raw
Source Lat/Long:	340500.0 1171600.0	Precision:	Undefined
Source Name:	NORMAN ROAD WELL - INACTIVE		
System Number:	3610067		
System Name:	SOUTH SAN BERNARDINO CWD - NORTH		
Organization That Operates System:			
	882 S TIPPECANOE AVE		
	SAN BERNARDINO 92408		
Pop Served:	600	Connections:	191
Area Served:	SOUTH SAN BERNARDINO		

X109
ESE **FED USGS** **USGS40000140866**
1/2 - 1 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340525117151901		
Monloc name:	001S004W13C001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0902902
Longitude:	-117.2561528	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1069.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19360101	Welldepth:	180
Welldepth units:	ft	Wellholedepth:	196
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1936	47.00	

Y110
SE
1/2 - 1 Mile
Higher

CA WELLS **CADW60000017704**

Objectid:	17704
Latitude:	34.0853
Longitude:	-117.2609
Site code:	340853N1172609W001
State well numbe:	01S04W13E002S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000017704

AA111
NE
1/2 - 1 Mile
Higher

CA WELLS **CADW60000017699**

Objectid:	17699
Latitude:	34.1045
Longitude:	-117.2604
Site code:	341045N1172604W001
State well numbe:	01S04W12D001S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000017699

AB112
WSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000140892**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340530117165601		
Monloc name:	001S004W15A004S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0916789
Longitude:	-117.2830982	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1008.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19540101	Welldepth:	100
Welldepth units:	ft	Wellholedepth:	110
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1954-08-16	10.50	

AC113
NNE
1/2 - 1 Mile
Higher

CA WELLS 888

Water System Information:

Prime Station Code:	01S/04W-11A03 S	User ID:	36C
FRDS Number:	3600067002	County:	San Beernardino
District Number:	66	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340620.0 1171540.0	Precision:	100 Feet (one Second)
Source Name:	LITTLE EAST WELL		
System Number:	3600067		
System Name:	CARDIFF FARMS MWC		
Organization That Operates System:	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		

AC114
NNE
1/2 - 1 Mile
Higher

CA WELLS 889

Water System Information:

Prime Station Code:	01S/04W-11A04 S	User ID:	36C
FRDS Number:	3600067001	County:	San Beernardino
District Number:	66	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340620.0 1171540.0	Precision:	100 Feet (one Second)
Source Name:	BIG WEST WELL		
System Number:	3600067		
System Name:	CARDIFF FARMS MWC		
Organization That Operates System:			
	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		

AC115
NNE **CA WELLS** **9782**
1/2 - 1 Mile
Higher

Water System Information:

Prime Station Code:	10N/01E-35P02 S	User ID:	36C
FRDS Number:	3600386001	County:	San Beernardino
District Number:	66	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340620.0 1171540.0	Precision:	100 Feet (one Second)
Source Name:	WELL 01		
System Number:	3600386		
System Name:	CALICO TRAILS MHP		
Organization That Operates System:			
	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		
Sample Collected:	27-JAN-14	Findings:	11. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	27-JAN-14	Findings:	2.3 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	27-JAN-14	Findings:	11. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	27-JAN-14	Findings:	1.4 PCI/L
Chemical:	URANIUM COUNTING ERROR		
Sample Collected:	27-JAN-14	Findings:	1.3 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	27-JAN-14	Findings:	0.88 PCI/L
Chemical:	URANIUM MDA95		
Sample Collected:	09-OCT-14	Findings:	11. UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	09-OCT-14	Findings:	13. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-JAN-15	Findings:	11. UG/L
Chemical:	CHROMIUM, HEXAVALENT		

Sample Collected:	18-MAR-15	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	20-APR-15	Findings:	9.9 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	15-JUL-15	Findings:	10. UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	19-OCT-15	Findings:	11. UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	02-MAR-16	Findings:	2.9 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-MAR-16	Findings:	11. UG/L
Chemical:	CHROMIUM, HEXAVALENT		

AB116
WSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000140886**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340529117165601		
Monloc name:	001S004W15A001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0914011
Longitude:	-117.2830982	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1008.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19120101	Welldepth:	500
Welldepth units:	ft	Wellholedepth:	500
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 409

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1959-09-10	39.80		1959-06-11	31.00	
1959-04-08	18.40		1959-03-10	5.30	
1959-01-16	11.50		1958-10-07	29.10	
1958-07-18	29.20		1958-05-15	11.50	
1958-03-28	63.60		1958-03-14	61.80	
1958-01-22	14.30		1957-11-27	22.30	
1957-09-25	35.50		1957-07-25	32.40	
1956-12-19	19.60		1956-10-26	22.30	
1956-09-13	29.10		1956-07-26	24.80	
1956-06-11	20.80		1954-04-29	5.70	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1954-03-16	9.20	
1953-08-24	3.40	
1953-05-22	3.40	
1953-01-26	35.80	
1952-08-25	4.60	
1952-05-09	28.80	
1952-01-22	35.80	
1951-10-01	6.40	
1951-03-10	31.70	
1950-12-20	21.10	
1950-02-21	48.80	
1949-10-27	23.40	
1949-07-15	23.40	
1949-02-08	41.90	
1948-08-24	15.30	
1948-04-06	40.70	
1947-09-15	21.70	
1947-03-25	32.70	
1946-08-29	18.80	
1946-03-25	38.40	
1945-10-17	35.00	
1945-06-10	38.40	
1945-01-31	50.00	
1944-10-04	25.70	
1944-06-28	32.70	
1944-03-13	62.70	
1943-11-11	39.60	
1943-06-09	33.20	
1943-03-22	61.50	
1942-12-28	47.70	
1942-08-12	26.30	
1942-05-08	34.40	
1942-03-04	46.50	
1941-12-17	56.30	
1941-09-02	41.30	
1941-01-30	26.30	
1940-10-23	22.30	
1940-07-29	20.50	
1940-06-04	26.90	
1940-03-29	28.00	
1940-01-03	22.80	
1939-10-03	28.60	
1939-08-03	21.10	
1939-05-31	26.30	
1939-03-30	36.70	
1939-02-01	48.30	
1938-12-06	35.00	
1938-09-30	29.20	
1938-01-28	9.60	
1937-10-29	18.20	
1937-08-30	19.90	
1937-07-07	24.00	
1937-03-21	12.40	
1936-10-17	19.60	
1936-09-17	8.60	

Date	Feet below Surface	Feet to Sealevel
1953-12-22	3.90	
1953-07-09	3.40	
1953-04-03	10.40	
1952-11-03	8.00	
1952-07-07	11.50	
1952-03-20	40.40	
1951-12-01	16.10	
1951-05-10	24.20	
1951-01-11	27.70	
1950-04-25	23.40	
1949-12-13	28.60	
1949-09-09	18.80	
1949-04-25	30.40	
1948-11-10	26.90	
1948-06-29	29.80	
1947-12-20	48.80	
1947-06-12	26.30	
1946-12-13	44.20	
1946-05-28	28.00	
1946-01-17	51.10	
1945-08-13	30.30	
1945-04-16	55.20	
1944-11-22	54.00	
1944-08-03	30.40	
1944-05-05	51.10	
1944-01-06	59.80	
1943-08-10	32.70	
1943-04-29	54.00	
1943-02-11	58.10	
1942-10-26	26.30	
1942-07-06	25.10	
1942-04-06	38.40	
1942-01-28	55.80	
1941-11-18	54.60	
1941-07-17	25.10	
1940-12-20	41.90	
1940-08-29	17.10	
1940-07-03	22.30	
1940-05-01	13.60	
1940-03-01	38.40	
1939-11-30	23.40	
1939-09-01	15.30	
1939-07-05	24.60	
1939-05-02	32.70	
1939-02-21	48.30	
1938-12-30	40.70	
1938-10-27	33.20	
1938-09-01	28.00	
1937-12-31	12.40	
1937-09-29	19.90	
1937-08-04	19.90	
1937-06-04	28.00	
1936-11-05	30.30	
1936-10-05	16.50	
1936-09-05	14.80	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1936-08-17	6.60	
1936-07-22	7.60	
1936-06-20	15.60	
1936-05-19	19.60	
1936-04-19	23.60	
1936-03-16	34.10	
1936-02-15	30.10	
1936-01-06	32.10	
1935-12-05	21.70	
1935-11-04	19.90	
1935-10-04	17.10	
1935-09-06	17.60	
1935-08-07	16.50	
1935-07-12	17.10	
1935-06-06	18.80	
1935-04-10	14.20	
1935-03-11	43.50	
1935-01-25	41.20	
1934-12-07	28.00	
1934-11-02	25.50	
1934-10-20	21.10	
1934-10-04	11.90	
1934-09-19	8.80	
1934-09-06	11.90	
1934-08-25	14.20	
1934-08-16	14.50	
1934-08-04	11.90	
1934-07-21	12.70	
1934-07-14	14.70	
1934-06-25	17.10	
1934-06-19	17.60	
1934-06-04	17.60	
1934-05-11	17.60	
1934-04-09	18.80	
1934-02-17	32.60	
1934-01-18	47.10	
1933-12-18	38.90	
1933-12-11	22.30	
1933-11-29	22.30	
1933-11-27	22.30	
1933-11-20	22.30	
1933-11-16	25.50	
1933-10-13	25.00	
1933-09-07	21.10	
1933-08-09	22.40	
1933-06-29	13.40	
1933-05-26	30.80	
1933-03-25	33.10	
1933-03-03	46.10	
1932-12-10	31.50	
1932-09-29	15.80	
1932-07-29	25.00	
1932-05-26	29.60	
1932-03-23	43.50	
1932-01-28	48.10	
1936-08-04	14.20	
1936-07-02	15.30	
1936-06-05	18.80	
1936-05-04	19.40	
1936-04-02	28.00	
1936-03-05	38.40	
1936-02-08	34.40	
1935-12-17	55.10	
1935-11-18	50.50	
1935-10-16	48.20	
1935-09-16	38.90	
1935-08-15	36.60	
1935-07-18	37.80	
1935-06-19	46.90	
1935-05-08	8.80	
1935-03-19	31.50	
1935-02-13	41.30	
1934-12-30	36.80	
1934-11-07	22.80	
1934-10-27	22.80	
1934-10-12	13.60	
1934-09-20	11.90	
1934-09-15	13.00	
1934-09-01	12.10	
1934-08-18	16.20	
1934-08-11	14.20	
1934-07-28	12.50	
1934-07-19	16.20	
1934-07-07	15.30	
1934-06-21	20.40	
1934-06-11	17.60	
1934-05-26	19.40	
1934-04-19	25.00	
1934-03-07	41.90	
1934-02-09	33.80	
1934-01-05	40.70	
1933-12-12	22.30	
1933-12-01	23.40	
1933-11-28	22.30	
1933-11-25	22.30	
1933-11-17	24.60	
1933-11-09	25.70	
1933-10-06	23.40	
1933-08-12	21.10	
1933-07-08	23.40	
1933-06-14	23.40	
1933-04-27	21.50	
1933-03-08	43.50	
1933-02-03	37.80	
1932-10-28	29.60	
1932-08-26	20.40	
1932-06-29	29.40	
1932-04-05	27.80	
1932-02-22	48.60	
1932-01-04	48.10	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1931-11-05	27.30	
1931-09-04	29.60	
1931-06-05	27.70	
1931-04-09	27.30	
1931-02-18	50.10	
1930-12-06	40.60	
1930-10-02	34.20	
1930-08-02	29.60	
1930-05-12	48.40	
1930-03-13	50.30	
1930-01-06	40.90	
1929-11-06	30.80	
1929-08-21	27.30	
1929-06-17	28.70	
1929-03-21	45.80	
1929-01-10	50.30	
1928-11-10	31.90	
1928-04-06	36.50	
1928-02-06	57.30	
1927-12-05	53.80	
1927-10-03	36.70	
1927-08-03	37.90	
1927-06-06	41.60	
1927-04-13	33.10	
1927-01-13	34.20	
1926-11-08	36.50	
1926-08-16	34.20	
1926-06-07	38.80	
1926-03-22	53.80	
1925-12-28	53.80	
1925-10-22	55.40	
1925-08-21	41.60	
1925-05-25	52.40	
1925-03-06	58.40	
1924-12-29	61.90	
1924-08-22	42.80	
1924-05-28	49.00	
1924-03-06	55.40	
1924-01-10	68.90	
1923-11-08	59.60	
1923-09-17	48.50	
1923-06-05	54.30	
1923-04-09	57.50	
1923-01-08	67.80	
1922-09-08	50.30	
1922-07-12	61.20	
1922-05-08	61.90	
1922-03-10	69.00	
1922-01-11	61.90	
1921-11-03	54.90	
1921-08-09	41.20	
1921-06-03	64.20	
1921-04-08	56.90	
1921-02-16	68.40	
1920-12-09	57.30	

Date	Feet below Surface	Feet to Sealevel
1931-09-25	23.20	
1931-07-31	22.70	
1931-05-11	29.60	
1931-03-18	42.60	
1931-01-19	47.60	
1930-11-06	29.60	
1930-09-04	29.60	
1930-06-12	34.20	
1930-04-02	38.80	
1930-02-08	55.60	
1929-12-12	23.10	
1929-09-16	13.50	
1929-07-16	22.90	
1929-05-23	22.70	
1929-02-14	57.50	
1928-12-14	50.30	
1928-10-08	35.40	
1928-03-03	53.80	
1928-01-04	58.40	
1927-11-03	49.40	
1927-09-07	31.90	
1927-07-07	38.80	
1927-05-06	22.70	
1927-03-15	36.40	
1926-12-15	45.80	
1926-10-02	36.70	
1926-07-16	38.80	
1926-04-20	64.40	
1926-02-19	61.90	
1925-11-20	52.00	
1925-09-23	40.90	
1925-07-24	38.80	
1925-04-13	61.90	
1925-01-24	60.20	
1924-11-14	59.60	
1924-07-11	43.40	
1924-04-07	69.00	
1924-02-14	60.80	
1923-12-08	61.90	
1923-10-05	50.40	
1923-07-07	45.80	
1923-05-10	55.00	
1923-03-08	71.40	
1922-11-04	59.40	
1922-08-04	55.40	
1922-06-03	60.80	
1922-04-08	73.20	
1922-02-02	70.00	
1921-12-08	55.30	
1921-09-09	42.30	
1921-07-11	41.60	
1921-05-09	54.80	
1921-03-09	64.60	
1921-01-07	61.40	
1920-11-04	57.80	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1920-10-04	46.30		1920-09-08	43.30	
1920-08-07	42.40		1920-07-07	45.90	
1920-06-04	55.20		1920-05-07	68.80	
1920-04-08	73.00		1920-03-12	73.00	
1920-02-06	61.20		1920-01-07	62.40	
1919-12-15	71.10		1919-11-06	47.80	
1919-09-26	41.50		1919-08-28	41.90	
1919-07-10	43.40		1919-06-12	46.90	
1919-05-07	57.50		1919-04-04	73.10	
1919-03-05	71.30		1919-02-04	69.30	
1919-01-03	66.20		1918-12-05	68.10	
1918-11-06	55.00		1918-10-11	59.60	
1918-09-10	45.90		1918-08-08	43.40	
1918-07-05	45.30		1918-06-11	52.80	
1918-05-08	54.90		1918-04-06	73.30	
1918-03-05	71.30		1918-02-05	68.60	
1918-01-02	64.40		1917-12-06	61.60	
1917-11-09	63.30		1917-10-05	46.30	
1917-09-14	46.90		1917-08-06	51.30	
1917-07-09	53.60		1917-06-05	64.70	
1917-05-05	68.90		1917-04-05	69.00	
1917-03-05	76.90		1917-01-12	76.00	
1916-12-23	69.30		1916-11-24	66.50	
1916-09-12	63.30		1916-07-18	64.20	
1916-04-10	71.10		1916-03-07	75.80	
1916-01-13	75.80		1915-12-27	68.40	
1915-11-26	60.00		1915-10-21	52.70	
1915-09-15	46.30		1915-08-16	48.90	
1915-07-18	55.80		1915-06-03	66.30	
1915-04-06	72.30				

AD117
NW
1/2 - 1 Mile
Lower

FED USGS **USGS40000141112**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340617117163601		
Monloc name:	001S004W11D002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1048889
Longitude:	-117.277611	Sourcemap scale:	24000
Horiz Acc measure:	.5	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	1030.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	963
Welldepth units:	ft	Wellholedepth:	963
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 6

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1991-04-29					
Note: The site was being pumped.					
1990-10-29					
Note: The site was being pumped.					
1990-04-17					
Note: The site was being pumped.					
1989-10-24					
Note: The site was being pumped.					
1989-04-25					
Note: The site was being pumped.					
1988-10-13					
Note: The site was being pumped.					

118
SE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140796**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340507117153301		
Monloc name:	001S004W13E002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0852904
Longitude:	-117.2600418	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1055.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19040101	Welldepth:	284
Welldepth units:	ft	Wellholedepth:	300
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 2

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1945-01-05	12.40		1939-08-22	14.30	

Map ID Direction Distance Elevation	Database	EDR ID Number
AA119 **NE** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000141111**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340616117153101		
Monloc name:	001S004W12D001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1044563
Longitude:	-117.2594863	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1066.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19040101	Welldepth:	972
Welldepth units:	ft	Wellholedepth:	972
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 13

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1951-03-06	2.80		1916-04-15	66.10	
1916-03-22	70.30		1916-02-24	67.70	
1916-01-14	63.40		1915-12-23	62.40	
1915-11-23	63.60		1915-10-28	50.90	
1915-09-20	49.10		1915-08-23	40.80	
1915-07-15	50.70		1915-06-27	51.40	
1915-05-28	60.10				

AA120 **NE** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000141110**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340616117153001		
Monloc name:	001S004W12D000S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1044563
Longitude:	-117.2592085	Sourcemap scale:	Not Reported

Horiz Acc measure:	Unknown	Horiz Acc measure units:	Unknown
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1066.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

AD121
NW
1/2 - 1 Mile
Lower

FED USGS **USGS40000141116**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340618117163901		
Monloc name:	001S004W11D003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1050117
Longitude:	-117.2783759	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1033.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19470101	Welldepth:	1040
Welldepth units:	ft	Wellholedepth:	1146
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

AE122
NE
1/2 - 1 Mile
Higher

FED USGS **USGS40000141093**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340613117152501		
Monloc name:	001S004W12D002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.103623
Longitude:	-117.2578196	Sourcemap scale:	Not Reported

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1068.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19440101	Welldepth:	136
Welldepth units:	ft	Wellholedepth:	152
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

AE123
NE
1/2 - 1 Mile
Higher

FED USGS **USGS40000141094**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340613117152502		
Monloc name:	001S004W12D007S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.103623
Longitude:	-117.2578196	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1068.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19440101	Welldepth:	97
Welldepth units:	ft	Wellholedepth:	100
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

AB124
WSW
1/2 - 1 Mile
Lower

CA WELLS **CADW60000018160**

Objectid:	18160
Latitude:	34.0917
Longitude:	-117.284
Site code:	340917N1172840W001
State well numbe:	01S04W15A004S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino

Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000018160

AF125
SE
1/2 - 1 Mile
Higher

CA WELLS **CADW60000017705**

Objectid:	17705
Latitude:	34.0864
Longitude:	-117.2576
Site code:	340864N1172576W001
State well numbe:	01S04W13E007S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000017705

AF126
SE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140828**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340513117152201		
Monloc name:	001S004W13D008S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.086957
Longitude:	-117.2569861	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1068.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19160101	Welldepth:	124
Welldepth units:	ft	Wellholedepth:	124
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

Map ID Direction Distance Elevation	Database	EDR ID Number
AB127 **WSW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADW60000030854**

Objectid:	30854
Latitude:	34.0914
Longitude:	-117.284
Site code:	340914N1172840W001
State well numbe:	01S04W15A001S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000030854

AD128 **NW** **1/2 - 1 Mile** **Lower**		**FED USGS**	**USGS40000141129**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340620117163801		
Monloc name:	001S004W11D004S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1055673
Longitude:	-117.278098	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1027.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19040101	Welldepth:	984
Welldepth units:	ft	Wellholedepth:	984
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

---

129 **West** **1/2 - 1 Mile** **Lower**		**FED USGS**	**USGS40000140954**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340542117170201		
Monloc name:	001S004W10Q001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0950121
Longitude:	-117.2847649	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1012.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19290101	Welldepth:	243
Welldepth units:	ft	Wellholedepth:	243
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

AG130
ENE **CA WELLS** **812**
1/2 - 1 Mile
Higher

Water System Information:

Prime Station Code:	01S/03W-12J02 S	User ID:	TAN
FRDS Number:	3610704003	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340558.0 1171512.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 05		
System Number:	3610704		
System Name:	Inland Valley Development Agency-Norton		
Organization That Operates System:			
	201 N. "E" ST., SUITE 203		
	SAN BERNARDINO, CA 92401-5300		
Pop Served:	1500	Connections:	1001
Area Served:	NORTON AIR FORCE BASE		

131
South **FED USGS** **USGS40000140741**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340454117161301		
Monloc name:	001S004W14P00AS		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0816794
Longitude:	-117.2711532	Sourcemap scale:	Not Reported

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1028.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19500101	Welldepth:	120
Welldepth units:	ft	Wellholedepth:	120
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1950-09-14	37.50	

AF132
SE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140820**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340511117152101		
Monloc name:	001S004W13E007S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0864015
Longitude:	-117.2567083	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1062.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19560101	Welldepth:	145
Welldepth units:	ft	Wellholedepth:	148
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1956-07-23	70.00	

133
WNW
1/2 - 1 Mile
Lower

CA WELLS **869**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Water System Information:

Prime Station Code:	01S/04W-03J05 S	User ID:	TAN
FRDS Number:	3610039049	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340600.0 1171700.0	Precision:	Undefined
Source Name:	SEVENTH STREET		
System Number:	3610039		
System Name:	SAN BERNARDINO CITY		
Organization That Operates System:			
	P.O. BOX 710,		
	SAN BERNARDINO, CA 92402		
Pop Served:	139789	Connections:	39453
Area Served:	SAN BERNARDINO		
Sample Collected:	09-MAR-11	Findings:	4.1 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	05-APR-11	Findings:	4.1 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	05-JUL-11	Findings:	25. C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	05-JUL-11	Findings:	720. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	05-JUL-11	Findings:	7.8
Chemical:	PH, LABORATORY		
Sample Collected:	05-JUL-11	Findings:	180. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	05-JUL-11	Findings:	210. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	05-JUL-11	Findings:	320. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	05-JUL-11	Findings:	96. MG/L
Chemical:	CALCIUM		
Sample Collected:	05-JUL-11	Findings:	19. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	05-JUL-11	Findings:	21. MG/L
Chemical:	SODIUM		
Sample Collected:	05-JUL-11	Findings:	4.5 MG/L
Chemical:	POTASSIUM		
Sample Collected:	05-JUL-11	Findings:	37. MG/L
Chemical:	CHLORIDE		
Sample Collected:	05-JUL-11	Findings:	110. MG/L
Chemical:	SULFATE		
Sample Collected:	05-JUL-11	Findings:	0.3 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	05-JUL-11	Findings:	2.3 UG/L
Chemical:	CHROMIUM, HEXAVALENT		

Sample Collected:	05-JUL-11	Findings:	510. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	05-JUL-11	Findings:	0.43
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	05-JUL-11	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-JUL-11	Findings:	0.79 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	05-JUL-11	Findings:	12.4
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	20-OCT-11	Findings:	24. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	17-JAN-12	Findings:	24. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	28-FEB-12	Findings:	2.1 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	06-MAR-12	Findings:	4.1 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	24-APR-12	Findings:	27. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	24-JUL-12	Findings:	320. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	24-JUL-12	Findings:	96. MG/L
Chemical:	CALCIUM		
Sample Collected:	24-JUL-12	Findings:	18. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	24-JUL-12	Findings:	23. MG/L
Chemical:	SODIUM		
Sample Collected:	24-JUL-12	Findings:	31. MG/L
Chemical:	CHLORIDE		
Sample Collected:	24-JUL-12	Findings:	100. MG/L
Chemical:	SULFATE		
Sample Collected:	24-JUL-12	Findings:	430. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	24-JUL-12	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-SEP-12	Findings:	4.3 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	30-OCT-12	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	22-JAN-13	Findings:	22. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	29-JAN-13	Findings:	3.67 PCI/L
Chemical:	GROSS ALPHA		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	29-JAN-13	Findings:	1.2 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	09-APR-13	Findings:	21. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	16-JUL-13	Findings:	22. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-AUG-13	Findings:	4.3 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	20-AUG-13	Findings:	310. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	20-AUG-13	Findings:	95. MG/L
Chemical:	CALCIUM		
Sample Collected:	20-AUG-13	Findings:	18. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	20-AUG-13	Findings:	26. MG/L
Chemical:	SODIUM		
Sample Collected:	20-AUG-13	Findings:	28. MG/L
Chemical:	CHLORIDE		
Sample Collected:	20-AUG-13	Findings:	110. MG/L
Chemical:	SULFATE		
Sample Collected:	20-AUG-13	Findings:	520. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	20-AUG-13	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	15-OCT-13	Findings:	22. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-FEB-14	Findings:	4.1 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	04-MAR-14	Findings:	4.5 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	01-APR-14	Findings:	4.1 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	08-APR-14	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-JUN-14	Findings:	4.5 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	29-JUL-14	Findings:	650. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	29-JUL-14	Findings:	7.5
Chemical:	PH, LABORATORY		
Sample Collected:	29-JUL-14	Findings:	180. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	29-JUL-14	Findings:	230. MG/L
Chemical:	BICARBONATE ALKALINITY		

Sample Collected:	29-JUL-14	Findings:	290. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	29-JUL-14	Findings:	87. MG/L
Chemical:	CALCIUM		
Sample Collected:	29-JUL-14	Findings:	18. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	29-JUL-14	Findings:	27. MG/L
Chemical:	SODIUM		
Sample Collected:	29-JUL-14	Findings:	4.2 MG/L
Chemical:	POTASSIUM		
Sample Collected:	29-JUL-14	Findings:	25. MG/L
Chemical:	CHLORIDE		
Sample Collected:	29-JUL-14	Findings:	110. MG/L
Chemical:	SULFATE		
Sample Collected:	29-JUL-14	Findings:	0.4 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	29-JUL-14	Findings:	2. UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	29-JUL-14	Findings:	460. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	29-JUL-14	Findings:	0.22
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	29-JUL-14	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	29-JUL-14	Findings:	11. UG/L
Chemical:	CARBON DIOXIDE		
Sample Collected:	29-JUL-14	Findings:	0.34 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	29-JUL-14	Findings:	12.1
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	29-JUL-14	Findings:	5300. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	26-AUG-14	Findings:	290. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	26-AUG-14	Findings:	87. MG/L
Chemical:	CALCIUM		
Sample Collected:	26-AUG-14	Findings:	17. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	26-AUG-14	Findings:	26. MG/L
Chemical:	SODIUM		
Sample Collected:	26-AUG-14	Findings:	25. MG/L
Chemical:	CHLORIDE		
Sample Collected:	26-AUG-14	Findings:	98. MG/L
Chemical:	SULFATE		

Sample Collected:	26-AUG-14	Findings:	500. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	26-AUG-14	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-SEP-14	Findings:	4.7 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	07-OCT-14	Findings:	4.8 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	21-OCT-14	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	20-NOV-14	Findings:	0.85 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	13-JAN-15	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	17-FEB-15	Findings:	4.2 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	04-MAR-15	Findings:	4.2 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	07-APR-15	Findings:	4.1 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	28-APR-15	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-JUL-15	Findings:	4.5 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	28-JUL-15	Findings:	20. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-AUG-15	Findings:	270. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	04-AUG-15	Findings:	83. MG/L
Chemical:	CALCIUM		
Sample Collected:	04-AUG-15	Findings:	16. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	04-AUG-15	Findings:	28. MG/L
Chemical:	SODIUM		
Sample Collected:	04-AUG-15	Findings:	23. MG/L
Chemical:	CHLORIDE		
Sample Collected:	04-AUG-15	Findings:	98. MG/L
Chemical:	SULFATE		
Sample Collected:	04-AUG-15	Findings:	390. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	04-AUG-15	Findings:	21. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-AUG-15	Findings:	4.8 UG/L
Chemical:	PERCHLORATE		

Sample Collected:	13-OCT-15	Findings:	4.9 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	13-OCT-15	Findings:	22. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	26-JAN-16	Findings:	4.1 MG/L
Chemical:	NITRATE (AS N)		

AF134
SE
1/2 - 1 Mile
Higher

CA WELLS **CADW60000032708**

Objectid:	32708
Latitude:	34.0861
Longitude:	-117.2568
Site code:	340861N1172568W001
State well numbe:	01S04W13F003S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000032708

135
East
1/2 - 1 Mile
Higher

FED USGS **USGS40000140931**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340538117150601		
Monloc name:	001S004W12P003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0939012
Longitude:	-117.2525416	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1072.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	980
Welldepth units:	ft	Wellholedepth:	980
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

AG136
ENE **FED USGS** **USGS40000141033**
1/2 - 1 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340559117150901		
Monloc name:	001S004W12F003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0997343
Longitude:	-117.253375	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	1100
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

137
NNW **FED USGS** **USGS40000141193**
1/2 - 1 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340627117163201		
Monloc name:	001S004W02N004S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1075117
Longitude:	-117.2764314	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1037.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19340101	Welldepth:	199
Welldepth units:	ft	Wellholedepth:	199
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

AH138
SSE **CA WELLS** **CADW60000018158**
1/2 - 1 Mile
Higher

Objectid:	18158
Latitude:	34.0814
Longitude:	-117.2648
Site code:	340814N1172648W001
State well numbe:	01S04W14J003S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000018158

139
SSE **FED USGS** **USGS40000140751**
1/2 - 1 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340456117154001		
Monloc name:	001S004W23R003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.082235
Longitude:	-117.2619863	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1060.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	627
Welldepth units:	ft	Wellholedepth:	627
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

Map ID Direction Distance Elevation	Database	EDR ID Number
AI140 **ESE** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**CADW60000001692**

Objectid:	1692
Latitude:	34.0917
Longitude:	-117.2526
Site code:	340917N1172526W001
State well numbe:	01S04W13B002S
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	’8-2.06’
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001692

AJ141 **SE** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000140815**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340510117151801		
Monloc name:	001S004W13F003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0861237
Longitude:	-117.255875	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1060.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19260101	Welldepth:	120
Welldepth units:	ft	Wellholedepth:	123
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 2

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1951-03-15	42.79		1926	28.00	

Map ID Direction Distance Elevation	Database	EDR ID Number
AK142 **SE** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000140789**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340506117152201		
Monloc name:	001S004W13F002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0850127
Longitude:	-117.256986	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1059.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19310101	Welldepth:	422
Welldepth units:	ft	Wellholedepth:	422
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 194

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1970-03-31	114.20		1969-11-18	130.76	
1969-04-29	131.06		1969-01-10	145.76	
1968-04-28	158.16				
Note: The site was being pumped.					
1967-12-02	142.21		1967-09-19	145.20	
1967-08-15	161.10				
Note: The site was being pumped.					
1967-07-11	138.10		1967-06-13	135.50	
1967-05-09	121.10		1967-04-11	133.20	
1967-03-07	144.10		1967-02-14	129.60	
1967-01-10	135.10		1966-12-13	140.30	
1966-11-29	146.30		1966-10-18	146.10	
1966-09-27	169.70				
Note: The site was being pumped.					
1966-09-21	166.70				
Note: The site was being pumped.					
1966-09-13	164.10				
Note: The site was being pumped.					
1966-09-06	161.90				
Note: The site was being pumped.					
1966-08-30	161.50				
Note: The site was being pumped.					
1966-08-23	162.50				
Note: The site was being pumped.					

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1966-08-16	162.10				
Note: The site was being pumped.					
1966-08-09	141.70		1966-08-02	142.00	
1966-07-26	144.30		1966-07-19	142.40	
1966-07-04	155.40				
Note: The site was being pumped.					
1966-06-28	162.60				
Note: The site was being pumped.					
1966-06-21	161.40				
Note: The site was being pumped.					
1966-06-14	159.40				
Note: The site was being pumped.					
1966-06-07	155.80				
Note: The site was being pumped.					
1966-05-24	131.90		1966-05-03	131.50	
1966-04-26	130.40		1966-04-19	130.10	
1966-04-12	128.10		1966-04-05	128.00	
1966-03-29	128.00		1966-03-23	127.00	
1966-03-15	125.00		1966-03-08	123.50	
1966-03-01	122.10		1966-02-22	122.20	
1966-02-15	121.10		1966-02-08	122.30	
1966-02-01	124.00		1966-01-25	124.30	
1966-01-18	123.50		1966-01-11	125.90	
1966-01-04	126.00		1965-12-28	127.20	
1965-12-21	127.30		1965-12-14	122.70	
1965-12-08	125.10		1965-11-30	121.20	
1965-11-23	132.60		1965-11-16	140.00	
1965-11-09	142.30				
1965-11-02	156.10				
Note: The site was being pumped.					
1965-10-24	150.10				
Note: The site was being pumped.					
1965-10-17	149.30				
Note: The site was being pumped.					
1965-10-05	139.00		1965-09-28	138.00	
1965-09-23	136.60		1965-09-16	138.90	
1965-09-08	142.00				
Note: The site was being pumped.					
1965-08-31	145.60				
Note: The site was being pumped.					
1965-08-24	144.30				
Note: The site was being pumped.					
1965-08-17	144.30				
Note: The site was being pumped.					
1965-08-10	140.30				
Note: The site was being pumped.					
1965-08-03	150.50				
Note: The site was being pumped.					
1965-07-27	130.10		1965-07-20	129.30	
1965-07-13	129.00		1965-07-06	128.60	
1965-03-20	123.00		1964-06-01	119.70	
1964-05-17	115.50		1964-04-14	111.90	
1964-03-05	116.30		1964-02-09	111.50	
1964-01-06	117.90				
Note: The site was being pumped.					

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1963-12-16	111.40	
1963-10-13	104.70	
1963-08-10	120.00	
1963-06-16	113.80	
Note: The site was being pumped.		
1963-05-17	113.60	
Note: The site was being pumped.		
1963-04-17	110.60	
Note: The site was being pumped.		
1963-03-18	95.40	
1963-02-10	100.50	
1962-12-31	101.50	
1962-12-11	115.60	
Note: The site was being pumped.		
1962-11-27	113.10	
Note: The site was being pumped.		
1962-10-31	100.30	
1962-09-20	113.00	
Note: The site was being pumped.		
1962-08-22	113.30	
Note: The site was being pumped.		
1962-07-28	117.20	
Note: The site was being pumped.		
1962-07-11	116.30	
Note: The site was being pumped.		
1962-06-16	114.80	
Note: The site was being pumped.		
1962-06-02	113.20	
Note: The site was being pumped.		
1962-05-19	112.00	
Note: The site was being pumped.		
1962-05-05	109.90	
Note: The site was being pumped.		
1962-04-21	106.30	
Note: The site was being pumped.		
1962-03-30	73.10	
1962-02-27	77.70	
1961-07-15	88.30	
1961-04-09	87.00	
1960-01-09	78.10	
1958-10-11	101.30	
Note: The site was being pumped.		
1958-10-04	101.60	
Note: The site was being pumped.		
1958-09-29	100.00	
Note: The site was being pumped.		
1958-09-20	101.30	
Note: The site was being pumped.		
1958-09-13	99.20	
Note: The site was being pumped.		
1958-09-06	97.80	
Note: The site was being pumped.		
1958-08-30	97.50	
Note: The site was being pumped.		
1958-08-23	101.50	
Note: The site was being pumped.		

Date	Feet below Surface	Feet to Sealevel
1963-11-17	108.00	
1963-09-20	107.70	
1963-07-13	105.30	
1963-02-25	97.10	
1963-01-23	101.40	
1962-10-18	99.60	
1962-03-14	75.00	
1962-02-09	81.10	
1961-04-22	88.20	
1960-03-12	48.30	
1958-12-13	63.10	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1958-08-16	99.70	
Note: The site was being pumped.		
1958-08-09	99.80	
Note: The site was being pumped.		
1958-08-02	97.90	
Note: The site was being pumped.		
1958-07-26	88.40	
Note: The site was being pumped.		
1958-07-19	88.80	
Note: The site was being pumped.		
1958-07-12	88.30	
Note: The site was being pumped.		
1958-07-05	85.60	
Note: The site was being pumped.		
1958-06-28	81.60	
Note: The site was being pumped.		
1958-06-21	77.40	
Note: The site was being pumped.		
1958-06-14	68.80	
Note: The site was being pumped.		
1958-06-02	56.20	
1958-05-24	53.80	
1958-05-10	54.30	
1958-04-26	45.30	
1958-04-12	33.90	
1958-03-29	40.20	
1958-03-15	42.70	
1958-03-01	47.20	
1958-02-15	47.70	
1958-01-18	58.20	
1957-12-23	54.50	
1957-12-07	65.30	
1957-11-23	86.30	
Note: The site was being pumped.		
1957-11-16	65.10	
1957-11-02	96.20	
Note: The site was being pumped.		
1957-10-26	95.50	
Note: The site was being pumped.		
1957-10-19	97.20	
Note: The site was being pumped.		
1957-10-10	102.90	
Note: The site was being pumped.		
1956-12-07	105.10	
Note: The site was being pumped.		
1956-11-14	106.10	
Note: The site was being pumped.		
1956-10-16	105.00	
Note: The site was being pumped.		
1956-09-19	103.00	
Note: The site was being pumped.		
1956-08-18	101.80	
Note: The site was being pumped.		
1956-07-08	58.90	
1956-04-28	50.70	

Date	Feet below Surface	Feet to Sealevel
1958-05-30	54.80	
1958-05-17	51.70	
1958-05-03	43.90	
1958-04-19	35.30	
1958-04-05	36.80	
1958-03-22	40.40	
1958-03-08	45.30	
1958-02-22	45.60	
1958-02-08	49.60	
1958-01-11	61.30	
1957-12-14	63.80	
1957-11-30	66.30	
1957-11-09	68.80	
1956-05-29	56.20	
1956-03-31	48.80	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1956-01-20	54.30		1955-12-14	51.70	
1955-11-17	53.10		1955-10-12	55.90	
1955-09-20	55.70		1955-08-19	54.30	
1955-07-14	52.50		1955-06-28	51.10	
1955-06-15	49.80		1955-05-30	48.30	
1955-05-04	44.60		1954-10-30	90.00	
1954-10-02	91.10		1931-04	0.20	

AH143
SSE **FED USGS** **USGS40000140737**
1/2 - 1 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340453117154701		
Monloc name:	001S004W14J003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0814016
Longitude:	-117.2639308	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1040.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19550101	Welldepth:	180
Welldepth units:	ft	Wellholedepth:	183
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1955-01-18	46.00	

AJ144
SE **CA WELLS** **893**
1/2 - 1 Mile
Higher

Water System Information:

Prime Station Code:	01S/04W-13F02 S	User ID:	WAT
FRDS Number:	3310031034	County:	Riverside
District Number:	14	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340507.6 1171520.9	Precision:	10 Feet (1/10 Second)
Source Name:	GAGE WELL 31-1		

System Number: 3310031
System Name: Riverside, City of
Organization That Operates System:
3900 MAIN STREET
RIVERSIDE, CA 92522
Pop Served: 245000 Connections: 58586
Area Served: RIVERSIDE

Sample Collected:	18-MAR-11	Findings:	17. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	18-MAR-11	Findings:	3.4 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	18-MAR-11	Findings:	28. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	18-MAR-11	Findings:	18. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	18-MAR-11	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	12-MAY-11	Findings:	28. PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	12-MAY-11	Findings:	4.2 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	12-MAY-11	Findings:	29. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	12-MAY-11	Findings:	18. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-MAY-11	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	02-JUL-14	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-JUL-14	Findings:	6300. MG/L
Chemical:	NITRATE + NITRITE (AS N)		

145
NE **CA WELLS** **CADW60000001690**
1/2 - 1 Mile
Higher

Objectid:	1690
Latitude:	34.1039
Longitude:	-117.2557
Site code:	341039N1172557W001
State well numbe:	01S04W12C001S
Local well name:	''
Well use id:	6
Well use descrip:	Unknown
County id:	36
County name:	San Bernardino
Basin code:	'8-2.06'
Basin desc:	Bunker Hill
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001690

Map ID Direction Distance Elevation	Database	EDR ID Number
146 **North** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000141230**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340633117161201		
Monloc name:	001S004W02P006S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1091783
Longitude:	-117.2708757	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1047.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19000101	Welldepth:	540
Welldepth units:	ft	Wellholedepth:	540
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

AI147 **ESE** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000140880**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340528117150601		
Monloc name:	001S004W13B001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0911236
Longitude:	-117.2525416	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1075.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19430101	Welldepth:	97
Welldepth units:	ft	Wellholedepth:	97
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

148
North
1/2 - 1 Mile
Higher

FED USGS **USGS40000141229**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340633117155801		
Monloc name:	001S004W02Q009S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.1091783
Longitude:	-117.2669866	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	1032
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

AK149
SE
1/2 - 1 Mile
Higher

FED USGS **USGS40000140782**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340505117152201		
Monloc name:	001S004W13M002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0847349
Longitude:	-117.256986	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1054.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19300101	Welldepth:	1106
Welldepth units:	ft	Wellholedepth:	937
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 281

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1970-03-31	103.00				
1969-11-18	136.10				
Note: The site was being pumped.					
1969-04-29	113.85				
1969-01-10	168.25				
Note: The site was being pumped.					
1968-04-28	169.70				
Note: The site was being pumped.					
1967-12-02	111.90		1967-09-06	147.50	
1967-08-15	187.30				
Note: The site was being pumped.					
1967-07-11	177.50				
Note: The site was being pumped.					
1967-06-13	175.10				
Note: The site was being pumped.					
1967-05-09	121.00		1967-04-20	127.20	
1967-03-10	162.50				
Note: The site was being pumped.					
1967-02-14	130.50		1967-01-10	120.60	
1966-12-13	128.70				
1966-11-15	174.60				
Note: The site was being pumped.					
1966-10-17	179.60				
Note: The site was being pumped.					
1966-09-27	150.40				
1966-09-21	183.60				
Note: The site was being pumped.					
1966-09-13	181.00				
Note: The site was being pumped.					
1966-09-06	181.20				
Note: The site was being pumped.					
1966-08-30	180.80				
Note: The site was being pumped.					
1966-08-23	181.50				
Note: The site was being pumped.					
1966-08-16	180.50				
Note: The site was being pumped.					
1966-08-11	197.20				
Note: The site was being pumped.					
1966-08-02	186.40				
Note: The site was being pumped.					
1966-07-26	188.50				
Note: The site was being pumped.					
1966-07-19	185.30				
Note: The site was being pumped.					
1966-07-13	180.30				
Note: The site was being pumped.					
1966-07-04	182.30				
Note: The site was being pumped.					
1966-06-27	176.20				
Note: The site was being pumped.					

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1966-06-21	175.20	
Note: The site was being pumped.		
1966-06-14	176.50	
Note: The site was being pumped.		
1966-06-07	179.80	
Note: The site was being pumped.		
1966-06-01	168.50	
Note: The site was being pumped.		
1966-05-24	167.80	
Note: The site was being pumped.		
1966-05-17	162.50	
Note: The site was being pumped.		
1966-05-10	161.50	
Note: The site was being pumped.		
1966-05-03	162.40	
Note: The site was being pumped.		
1966-04-27	162.90	
Note: The site was being pumped.		
1966-04-20	158.50	
Note: The site was being pumped.		
1966-04-12	161.10	
Note: The site was being pumped.		
1966-04-05	162.50	
Note: The site was being pumped.		
1966-03-29	154.50	
Note: The site was being pumped.		
1966-03-23	157.30	
Note: The site was being pumped.		
1966-03-15	152.40	
Note: The site was being pumped.		
1966-03-08	149.50	
Note: The site was being pumped.		
1966-02-22	115.70	
1966-02-08	107.50	
1966-01-25	110.50	
1966-01-11	114.80	
1965-12-28	112.50	
1965-12-14	114.50	
1965-11-30	115.50	
1965-11-17	165.00	
Note: The site was being pumped.		
1965-11-09	171.50	
Note: The site was being pumped.		
1965-11-02	171.50	
Note: The site was being pumped.		
1965-10-26	177.00	
Note: The site was being pumped.		
1965-10-17	175.40	
Note: The site was being pumped.		
1965-10-05	176.10	
Note: The site was being pumped.		
1965-09-28	173.00	
Note: The site was being pumped.		
1965-09-22	152.10	
Note: The site was being pumped.		
1966-02-15	106.60	
1966-02-01	111.00	
1966-01-18	111.50	
1966-01-04	109.50	
1965-12-21	110.50	
1965-12-08	116.50	
1965-11-23	119.50	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1965-09-16	168.90	
Note: The site was being pumped.		
1965-09-08	168.50	
Note: The site was being pumped.		
1965-08-31	165.80	
Note: The site was being pumped.		
1965-08-24	169.40	
Note: The site was being pumped.		
1965-08-17	165.50	
Note: The site was being pumped.		
1965-08-10	163.50	
Note: The site was being pumped.		
1965-08-03	165.30	
Note: The site was being pumped.		
1965-07-27	166.50	
Note: The site was being pumped.		
1965-07-19	169.20	
Note: The site was being pumped.		
1965-07-13	165.30	
Note: The site was being pumped.		
1965-07-06	162.80	
Note: The site was being pumped.		
1965-03-20	104.90	
1964-06-18	173.50	
Note: The site was being pumped.		
1964-05-18	175.00	
Note: The site was being pumped.		
1964-04-14	142.50	
1964-03-05	137.70	
Note: The site was being pumped.		
1964-02-11	95.80	
1964-01-13	151.90	
Note: The site was being pumped.		
1963-12-16	138.00	
Note: The site was being pumped.		
1963-11-17	145.10	
Note: The site was being pumped.		
1963-10-13	141.90	
Note: The site was being pumped.		
1963-09-20	87.70	
1963-08-10	143.50	
Note: The site was being pumped.		
1963-07-12	142.10	
Note: The site was being pumped.		
1963-06-17	135.90	
Note: The site was being pumped.		
1963-05-17	130.90	
Note: The site was being pumped.		
1963-04-17	120.70	
Note: The site was being pumped.		
1963-03-10	87.90	
1963-02-10	91.90	
1962-12-31	122.20	
Note: The site was being pumped.		
1962-12-11	134.10	
Note: The site was being pumped.		
1963-02-25	79.50	
1963-01-23	92.70	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1962-11-27	133.00	
Note: The site was being pumped.		
1962-11-09	131.10	
Note: The site was being pumped.		
1962-10-18	131.50	
Note: The site was being pumped.		
1962-10-05	131.00	
Note: The site was being pumped.		
1962-09-08	134.20	
Note: The site was being pumped.		
1962-08-09	133.90	
Note: The site was being pumped.		
1962-07-28	130.90	
Note: The site was being pumped.		
1962-07-11	129.30	
Note: The site was being pumped.		
1962-06-16	116.80	
Note: The site was being pumped.		
1962-06-02	111.70	
Note: The site was being pumped.		
1962-05-19	111.90	
Note: The site was being pumped.		
1962-04-26	115.90	
Note: The site was being pumped.		
1962-04-10	115.10	
Note: The site was being pumped.		
1962-03-30	98.80	
Note: The site was being pumped.		
1962-03-15	93.20	
Note: The site was being pumped.		
1962-02-27	103.80	
Note: The site was being pumped.		
1962-02-10	102.40	
Note: The site was being pumped.		
1961-09-29	125.00	
Note: The site was being pumped.		
1961-09-15	127.20	
Note: The site was being pumped.		
1961-08-26	132.20	
Note: The site was being pumped.		
1961-08-12	127.40	
Note: The site was being pumped.		
1961-07-29	129.80	
Note: The site was being pumped.		
1961-07-15	125.40	
Note: The site was being pumped.		
1961-07-01	122.50	
Note: The site was being pumped.		
1961-06-14	109.50	
Note: The site was being pumped.		
1961-06-03	93.00	
Note: The site was being pumped.		
1961-05-20	96.40	
Note: The site was being pumped.		
1961-05-05	93.10	
Note: The site was being pumped.		

Date	Feet below Surface	Feet to Sealevel

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1961-04-22	94.90	
Note: The site was being pumped.		
1961-04-09	88.20	
Note: The site was being pumped.		
1961-03-18	66.60	
1961-02-11	63.40	
1961-01-19	71.70	
1960-12-13	64.00	
1960-12-03	109.00	
Note: The site was being pumped.		
1960-11-19	106.70	
Note: The site was being pumped.		
1960-11-02	116.70	
Note: The site was being pumped.		
1960-10-18	116.50	
Note: The site was being pumped.		
1960-10-07	119.60	
Note: The site was being pumped.		
1960-09-13	116.80	
Note: The site was being pumped.		
1960-09-06	117.70	
Note: The site was being pumped.		
1960-08-13	120.10	
Note: The site was being pumped.		
1960-07-30	121.40	
Note: The site was being pumped.		
1960-07-14	123.60	
Note: The site was being pumped.		
1960-07-02	126.50	
Note: The site was being pumped.		
1960-06-24	75.30	
1960-06-04	119.40	
Note: The site was being pumped.		
1960-05-20	121.00	
Note: The site was being pumped.		
1960-05-13	115.60	
Note: The site was being pumped.		
1960-04-23	119.20	
Note: The site was being pumped.		
1960-04-10	116.00	
Note: The site was being pumped.		
1960-03-19	69.90	
Note: The site was being pumped.		
1960-03-05	56.90	
Note: The site was being pumped.		
1960-02-27	34.80	
1960-01-09	44.20	
1959-12-02	69.50	
1959-11-14	61.40	
1959-10-12	122.40	
Note: The site was being pumped.		
1959-10-03	119.50	
Note: The site was being pumped.		
1959-06-15	105.60	
1959-06-01	95.40	
Note: The site was being pumped.		

Date	Feet below Surface	Feet to Sealevel
1961-03-06	68.20	
1961-02-06	59.20	
1960-12-31	69.00	
1960-02-06	33.50	
1959-12-12	64.40	
1959-11-23	63.50	
1959-11-06	55.90	
1959-06-08	104.70	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1959-05-16	92.90	
Note: The site was being pumped.		
1959-05-11	91.50	
Note: The site was being pumped.		
1959-05-02	89.00	
Note: The site was being pumped.		
1959-04-27	90.00	
Note: The site was being pumped.		
1959-04-18	89.80	
Note: The site was being pumped.		
1959-04-04	90.30	
Note: The site was being pumped.		
1959-03-21	96.30	
Note: The site was being pumped.		
1959-02-09	42.90	
1959-01-17	36.00	
1958-12-13	52.10	
1958-12-01	48.30	
1958-11-14	45.30	
1958-10-31	121.10	
Note: The site was being pumped.		
1958-10-25	119.40	
Note: The site was being pumped.		
1958-10-16	121.10	
Note: The site was being pumped.		
1958-10-11	92.90	
Note: The site was being pumped.		
1958-10-04	97.70	
Note: The site was being pumped.		
1958-09-29	97.20	
Note: The site was being pumped.		
1958-09-20	98.80	
Note: The site was being pumped.		
1958-09-14	96.90	
Note: The site was being pumped.		
1958-09-06	96.70	
Note: The site was being pumped.		
1958-08-30	98.30	
Note: The site was being pumped.		
1958-08-23	96.80	
Note: The site was being pumped.		
1958-08-16	99.20	
Note: The site was being pumped.		
1958-08-09	98.40	
Note: The site was being pumped.		
1958-08-02	96.00	
Note: The site was being pumped.		
1958-07-26	86.60	
Note: The site was being pumped.		
1958-07-18	85.90	
Note: The site was being pumped.		
1958-07-12	87.40	
Note: The site was being pumped.		
1958-07-05	86.90	
Note: The site was being pumped.		

Date	Feet below Surface	Feet to Sealevel
1959-01-31	40.80	
1958-12-29	48.80	
1958-12-06	51.80	
1958-11-22	50.10	
1958-11-08	52.90	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1958-06-28	89.30	
Note: The site was being pumped.		
1958-06-21	87.80	
Note: The site was being pumped.		
1958-06-14	87.50	
Note: The site was being pumped.		
1958-06-07	82.70	
Note: The site was being pumped.		
1958-05-31	80.80	
Note: The site was being pumped.		
1958-05-24	77.30	
Note: The site was being pumped.		
1958-05-17	73.10	
Note: The site was being pumped.		
1958-05-10	77.90	
Note: The site was being pumped.		
1958-05-03	70.20	
Note: The site was being pumped.		
1958-04-26	70.40	
Note: The site was being pumped.		
1958-04-19	34.70	
Note: The site was being pumped.		
1958-04-12	17.30	
1958-03-29	38.80	
Note: The site was being pumped.		
1958-03-22	18.60	
1958-03-08	42.70	
Note: The site was being pumped.		
1958-03-01	43.60	
Note: The site was being pumped.		
1958-02-22	45.20	
Note: The site was being pumped.		
1958-02-15	44.00	
Note: The site was being pumped.		
1958-02-08	31.80	
1958-01-11	37.90	
1957-12-23	44.50	
1957-12-07	43.80	
1957-11-30	43.50	
Note: The site was being pumped.		
1957-11-23	84.80	
Note: The site was being pumped.		
1957-11-16	39.30	
1957-11-02	44.20	
1957-10-19	48.00	
1957-10-05	91.30	
Note: The site was being pumped.		
1957-09-28	93.80	
Note: The site was being pumped.		
1957-09-20	90.80	
Note: The site was being pumped.		
1957-09-10	93.30	
Note: The site was being pumped.		
1957-09-04	93.20	
Note: The site was being pumped.		

Date	Feet below Surface	Feet to Sealevel
1958-04-05	18.20	
1958-03-15	28.90	
1958-01-18	35.50	
1958-01-04	31.40	
1957-12-14	46.20	
1957-11-09	41.90	
1957-10-26	47.80	

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel
1957-08-24	92.50	
Note: The site was being pumped.		
1957-08-09	104.00	
Note: The site was being pumped.		
1957-07-26	114.80	
Note: The site was being pumped.		
1957-07-18	114.80	
Note: The site was being pumped.		
1957-07-06	112.70	
Note: The site was being pumped.		
1957-06-29	113.90	
Note: The site was being pumped.		
1957-06-22	105.20	
Note: The site was being pumped.		
1957-06-15	104.90	
Note: The site was being pumped.		
1957-04-06	99.10	
Note: The site was being pumped.		
1957-02-21	23.10	
1956-12-07	107.30	
Note: The site was being pumped.		
1956-11-14	104.80	
Note: The site was being pumped.		
1956-10-16	101.00	
Note: The site was being pumped.		
1956-09-19	106.20	
Note: The site was being pumped.		
1956-08-17	107.50	
Note: The site was being pumped.		
1956-07-30	62.80	
Note: The site was being pumped.		
1956-07-19	74.20	
Note: The site was being pumped.		
1956-05-26	88.90	
Note: The site was being pumped.		
1956-05-19	89.80	
1956-03-31	39.40	
1955-12-14	25.50	
1955-10-12	46.80	
1955-08-19	48.00	
1955-06-28	41.50	
1955-05-30	34.60	
1954-10-30	80.00	
1954-10-02	78.00	
Note: The site was being pumped.		

Date	Feet below Surface	Feet to Sealevel
1956-12-31	46.50	
1956-04-28	27.80	
1956-01-20	28.80	
1955-11-17	37.80	
1955-09-20	50.00	
1955-07-14	44.20	
1955-06-15	38.80	
1955-05-04	23.20	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for SAN BERNARDINO County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for SAN BERNARDINO COUNTY, CA

Number of sites tested: 18

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.678 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

APPENDIX E
CREDENTIALS

DAVID M. JAMISON
FIELD ENVIRONMENTAL SCIENTIST

PROFESSIONAL EXPERIENCE

Mr. Jamison is Field Geologist in Terracon's Orange County, California Office. He has a bachelor's degree in geology and is currently a field geologist working on Phase I Environmental Site Assessments as well as Phase II Site Investigations. He also has experience with surface water resources and water quality monitoring.

PROJECT EXPERIENCE

Phase 1 Environmental Site Assessments (ESA)

Project lead, historical researcher and site inspector on multiple office buildings, retail stores, warehouses, industrial sites and telecommunications projects, mostly in the State of Utah with a growing background in California.

Phase II Limited Site Investigations (LSI)

As a field geologist Mr. Jamison has worked on projects ranging from small test pits on small sites to investigating underground storage tank (UST) and leaking underground storage tank (LUST) sites at facilities such as the Salt Lake City International Airport. While conducting limited site investigations Mr. Jamison is responsible for logging and describing soils and contaminants and properly collecting and transporting soil and groundwater samples.

EPA National River and Stream (NRS) assessments in the State of Utah

Responsible for properly and effectively logging stream ecosystem information including water quality data, stream geomorphology, plant and fish presence. As well as collecting water quality data and analytical samples in streams around the State of Utah as part of a standardized national survey of the quality of the nation's waterways.

Utah Comprehensive Analysis of Stream Ecosystems (UCASE): surveys and sampling.

Responsible for properly and effectively logging stream ecosystem information including water quality data, stream geomorphology, plant and fish presence in streams around the State of Utah in an attempt to catalog and analyze the health and quality of Utah waterways.

EPA National Lake Survey (NLS) Sampling

Responsible for collecting information and samples in accordance with the nationally standardized plan for surveying the nation's lakes in the State of Utah.

Education
Bachelor of Science, Geology, University of Utah, 2013

Certifications
AHERA: Building Inspector

OSHA 40-hour HAZWOPER

Visible Emissions Evaluator, State of Utah, No. 429325

Soil and Groundwater Sampling Cert, State of Utah, GS 1710

Work History
Terracon Consultants, Inc.
Field Geologist
2016 – Present

Terracon Consultants, Inc.
Field Environmental Scientist
2015 – 2016

State of Utah, Department of Environmental Quality, Division of Water Quality, Field sampling technician, 2013-2014.

CARL A. PARTEN, P.G.

OFFICE MANAGER

PROFESSIONAL EXPERIENCE

Mr. Parten has over twenty-nine years of experience in environmental consulting in multiple regional regulatory districts throughout the United States. His professional experience includes comprehensive site investigations and remediation studies for Industrial and Hazardous Waste sites, municipal solid waste landfill sites and underground storage tank (UST) facilities.

He has successfully managed and obtained regulatory closure of over 30 Voluntary Cleanup Program (VCP) sites and leaking underground storage tank (LUST) facilities, and coordinated UST removal and closure for numerous facilities in multiple states throughout the United States. Mr. Parten continues to serve as a technical lead with Terracon and he possesses extensive experience in the installation of monitor wells, aquifer characterization, sensitive receptor surveys, risk-based assessments, vapor intrusion (VI) evaluations, and soil-gas assessments. Additionally, he has extensive experience in comprehensive soil and groundwater investigations on industrial facilities and municipal solid waste (MSW) landfill facilities, including evaluation of landfill gas/methane impacts. He has prepared and implemented corrective action work plans for remediation of chlorinated hydrocarbons at dry cleaner facilities and petroleum hydrocarbons at LUST facilities, MSW landfill facilities, and managed and implemented groundwater pump and treat, non-aqueous phase liquid (NAPL) recovery, and duel-phase vapor extraction systems for the recovery of petroleum hydrocarbons. Additionally, Mr. Parten developed work plans and implemented the remediation of heavy metals and poly-nuclear aromatic hydrocarbons (PAHs).

PROJECT EXPERIENCE

Industrial Facility – Union City, California
Subsurface investigation and delineation of heavy metals and polynuclear aromatic hydrocarbons (PAHs) in soil to facilitate the development of response actions and waste characterization/disposal of impacted environmental media at a large industrial facility with over sixty years of operations. Consulting services included preparation of investigation reports, response action work plans, and client/regulatory interaction.

Industrial Facility – Land-use Change/Private School, Los Angeles, CA
Environmental consulting services including Phase I Environmental Site Assessments (ESA) due diligence support, subsurface investigation activities to evaluate environmental media including soil, groundwater, soil gas and indoor / outdoor air. Services included a land-use change from an industrial facility to a private school. Prepared environmental investigation reports, regulatory interaction, corrective action design and work plan for management of environmental media.

USARC Facility – Mare Island, California
Environmental team leader for evaluation of an existing 32-acre military facility, Mare Island in California. The teaming effort included the preparation of a Technical Assessment report on the facility to provide USAR a decision making and programming tool to establish future

Education

Bachelor of Science, Geology, Sul Ross State University, Alpine, Texas, 1994

Additional Courses:
University of Houston TCEQ Texas Risk Reduction Program: Mod. I, II, and III

Roadmap to Remediation

CAPM Refresher Course, Texas A&M University

TNRCC Hazardous Waste Seminar

TNRCC PST Risk Assessments Seminar

TNRCC Pollution Prevention Training Workshop

API Risk/Exposure Assessment

Contaminant Fate and Transport Modeling in Risk Assessment

Environmental Hydrology / Soil Science

Certifications

Licensed Professional Geoscientist (P.G.), I.D. # 221, Texas Board of Professional Geoscientists 2003 (current)

Registered Professional Geologist (P.G.), I.D. # 004037; State of Tennessee, May 1996 (current)

TCEQ Corrective Action Project Manager, CAPM #01091 (current)

40 Hour OSHA Hazardous Waste Site & Waste Management Training

Affiliations

BDA/Orange County

CMAA

Groundwater Resource Assoc.

Geological Society of America

Work History

Terracon Consultants, Inc. (Irvine), Principal, Office Manager, July 2010 to Present

Terracon Consultants, Inc. (Dallas), Environmental Group Manager, August 1998 to July 2010

ATC (formerly ATEC) Associates, Inc. - Dallas, Texas, Senior Project Manager April 1990 to August 1998

Terratech, Inc. - San Jose, California, Environmental and Geotechnical Technician February 1989 to March 1990

Woodward-Clyde Consultants - San Jose, California, Environmental and Geotechnical Technician March 1987 to February 1989

restoration and replacement upgrades to the facility. The report included an evaluation of existing conditions of the site and facilities with respect to current mission and identified construction costs required to comply with USAR facility standards, Anti-Terrorism/Force Protection requirements, handicapped accessibility regulations, and current building codes. Conceptual costs for related improvements and environmental mitigation were presented.

Major Department Store Commercial Retail Portfolio
Environmental team lead for evaluating environmental site conditions and due diligence review, including overseeing Phase I Environmental Site Assessments and Phase II Environmental Site Investigations for over fifty retail facilities with automotive maintenance across California. Findings from subsurface investigations were used to support regulatory closure of select facilities to facilitate a real estate transaction across the United States.

Automated Fuel Dispensing Facilities – Camp Pendleton, California
Project scope included environmental and geotechnical investigations at six fueling existing/proposed facilities within Camp Pendleton, California. The project consisted of construction of new buildings, canopies, pavements, retaining walls, slopes, and installation of underground storage tanks (USTs), and other site facilities. Served as the primary client point of contact and environmental technical leader.

Mixed-Use High-rise Building, West Hollywood, California
Conducted comprehensive investigation and assisted the client through enrolling and interacting with the DTSC / VCP regarding chlorinated solvent and heavy metal-impacted soil and groundwater. Provided construction management oversight to manage impacted soils and assisted the client in waste disposition, permitting and regulatory compliance interaction. A total of 52,000 cubic yards of soil was removed from the site and disposed at an off-site facility, prior to the construction of a $170M high-rise multi-use complex. Terracon's support services allowed for significant savings in construction, on an expedited timeline in concert with the construction schedule.

Underground Storage Tank and Soil Remediation – Regional Water Board, Squaw Valley, CA
Terracon assisted a private developer with the regulatory closure of an underground storage tank (UST) site located in Squaw Valley, California. The abandoned 10,000-gallon UST was responsible for a release of heavy waste oils to the ground surface and banks of a creek. Following disposal of the UST, approximately 70 cubic yards of petroleum-impacted soils were excavated and properly disposed. Interaction with the Regional Water Board and Public Notification resulted in the issuance of case closure.

Retail Shopping Center – Former Dry Cleaners Facility – DTSC, Fremont, CA
Conducted extensive site investigation activities to evaluate the magnitude and extent of chlorinated solvents identified in the vicinity of a former dry cleaners facility, including an evaluation of groundwater, soil, soil-gas and indoor vapors as a result of a chlorinated solvent plume. Mr. Parten provided direct support and interaction with client, client legal team and DTSC representatives to manage the closure process, including the preparation of work plans and environmental investigation reports, risk-based human health evaluation, and response actions.

Soil Remediation – Riverside County Regulatory Oversight, Telecommunications Site, Perris, CA
Terracon assessed the magnitude and extent of a surficial release of petroleum hydrocarbons, developed a work plan, approved by overseeing agency, and conducted remediation, removal and legal disposal of 80 cubic yards of non-hazardous soil.

Municipal Landfill – VCP Site
Successfully oversaw and managed the engineering design and construction quality assurance for the closure and restoration of a high-profile MSW landfill in accordance with regulatory standards, subsequent to significant investigation activities. The remedy consisted of removal and consolidation of wastes and construction of LFG recovery trenches to prevent migration of landfill gas. The remedy utilized engineering controls and removal of impacted media. Project management responsibilities included coordination with Local, State and Federal officials, public/neighborhood communications, and interaction with attorneys, and management of project budgets that exceeded $4.5 million over seven years. Terracon continues to provide post closure care monitoring and O&M for the site.

Department of Transportation Contract
Successfully managed a two-year environmental services contract with the Texas Department of Transportation (TxDOT) and coordinated multiple Terracon offices to provide geographic coverage of environmental consulting service throughout Texas. Mr. Parten was the liaison to TxDOT for the performance of environmental consulting services, and provided senior technical review of environmental investigations, Phase I ESAs, removal of underground storage tanks, remediation of affected media and waste management, asbestos and lead-based paint investigations, and management of financial metrics and budgets in strict conformance with negotiated fees and procedures under a $2,000,000 contract.

City-Operated LUST Facilities
Provided senior project management of 14 City operated LUST facilities through coordination of investigation, regulatory reporting and response actions in the pursuit of closure. Mr. Parten was responsible for managing all site activities, evaluation of data, reporting, communicating with local and state officials, and management of budget and schedule requirements.

Municipal Property
Provided senior project management and technical review of several properties, including the remediation of metals and PAH-impacted soils, using a combination of excavation and removal and in-place stabilization. Work was performed under the EPA Brownfields Program and the Voluntary Cleanup Program. The $1.2 million dollar remediation project was part of a high-profile downtown parks and recreation redevelopment project that successfully established LEED Certified public parks in areas once occupied by commercial and industrial property. Mr. Parten was responsible for managing all site activities, evaluation of data, reporting, communicating with local and state officials, and management of budget and schedule requirements.

3.023-Acre Tract – VCP Site
Successfully managed a Phase I ESA and subsequent comprehensive site investigation to evaluate historical site activities and non-native fill material. Chemicals of concern included VOCs, TPH, metals and PAHs in on-site soil and groundwater. Subsequent to completion of a risk-based assessment, response actions including remediation of approximately 1,500 cubic yards of impacted soils was performed to obtain a voluntary cleanup program Certificate of Completion. Mr. Parten was responsible for managing all site activities, evaluation of data, reporting, and communication with state officials.

Retail Shopping Center – VCP Site
Conducted extensive site investigation activities to evaluate the magnitude and extent of chlorinated solvents identified in the vicinity of a former dry cleaners facility. The chlorinated solvent plume was defined to drinking water standards and was delineated to a creek channel nearly 1,200 feet from the source property. Based on site investigation results, assisted the property owner in entering the site into the VCP, and managed and implemented response actions and treatment of affected media utilizing a combination of source-removal/excavation (750 cubic yards) within the building interiors, hydrogen-releasing compound (HRC®) treatment of backfill, and HRC injection into the underlying soil and groundwater across the site. Treatment technology effectively remediated affected soils and significantly reduced contaminant levels within the on-site source areas. Additional response actions were conducted to reduce on-site groundwater contamination levels through HRC injection at over 250 locations. Monitored natural attenuation and groundwater monitoring was performed for a period of approximately four years. Mr. Parten assisted the client in the establishment of a deed restriction (Municipal Setting Designation) that restricted the use of groundwater on the site. Mr. Parten interacted with City and State officials and prepared and submitted multiple reports documenting site activities, and managed a project budget totaling $1,200,000.

Additional Project Experience
Under the direction and senior technical review by Mr. Parten, final site closure has been obtained for over thirty VCP, Innocent Owner/Operator Program, LUST, and Industrial and Hazardous Waste facilities in multiple states across the United States. Additionally, Mr. Parten has coordinated and managed the removal of dozens of underground storage tank (UST) systems and remediation of contaminated soil and groundwater. Mr. Parten has provided expert testimony on multiple projects, and is a primary point of contact interacting with environmental attorneys and regulatory agencies.

APPENDIX F
DESCRIPTION OF TERMS AND ACRONYMS

Description of Selected General Terms and Acronyms

Term/Acronym	*Description*
ACM	Asbestos Containing Material. Asbestos is a naturally occurring mineral, three varieties of which (chrysotile, amosite, crocidolite) have been commonly used as fireproofing or binding agents in construction materials. Exposure to asbestos, as well as ACM, has been documented to cause lung diseases including asbestosis (scarring of the lung), lung cancer and mesothelioma (a cancer of the lung lining). Regulatory agencies have generally defined ACM as a material containing greater that one (1) percent asbestos, however some states (e.g. California) define ACM as materials having 0.1% asbestos. In order to define a homogenous material as non-ACM, a minimum number of samples must be collected from the material dependent upon its type and quantity. Homogenous materials defined as non-ACM must either have 1) no asbestos identified in all of its samples or 2) an identified asbestos concentration below the appropriate regulatory threshold. Asbestos concentrations are generally determined using polarized light microscopy or transmission electron microscopy. Point counting is an analytical method to statistically quantify the percentage of asbestos in a sample. The asbestos component of ACM may either be friable or non-friable. Friable materials, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure and have a higher potential for a fiber release than non-friable ACM. Non-friable ACM are materials that are firmly bound in a matrix by plastic, cement, etc. and, if handled carefully, will not become friable. Federal and state regulations require that either all suspect building materials be presumed ACM or that an asbestos survey be performed prior to renovation, dismantling, demolition, or other activities that may disturb potential ACM. Notifications are required prior to demolition and/or renovation activities that may impact the condition of ACM in a building. ACM removal may be required if the ACM is likely to be disturbed or damaged during the demolition or renovation. Abatement of friable or potentially friable ACM must be performed by a licensed abatement contractor in accordance with state rules and NESHAP. Additionally, OSHA regulations for work classification, worker training and worker protection will apply.
AHERA	Asbestos Hazard Emergency Response Act
AST	Aboveground Storage Tanks. ASTs are generally described as storage tanks less than 10% of which are below ground (i.e., buried). Tanks located in a basement, but not buried, are also considered ASTs. Whether, and the extent to which, an AST is regulated, is determined on a case-by-case basis and depends upon tank size, its contents and the jurisdiction of its location.
BGS	Below Ground Surface
Brownfields	State and/or tribal listing of Brownfield properties addressed by Cooperative Agreement Recipients or Targeted Brownfields Assessments.
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes. BTEX are VOC components found in gasoline and commonly used as analytical indicators of a petroleum hydrocarbon release.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act (a.k.a. Superfund). CERCLA is the federal act that regulates abandoned or uncontrolled hazardous waste sites. Under this Act, joint and several liability may be imposed on potentially responsible parties for cleanup-related costs.
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System. An EPA compilation of sites having suspected or actual releases of hazardous substances to the environment. CERCLIS also contains information on site inspections, preliminary assessments and remediation of hazardous waste sites. These sites are typically reported to EPA by states and municipalities or by third parties pursuant to CERCLA Section 103.
CESQG	Conditionally Exempt Small Quantity Generators
CFR	Code of Federal Regulations

Description of Selected General Terms and Acronyms

Term/Acronym	*Description*
CREC	Controlled Recognized Environmental Condition is defined in ASTM E1527-13 as "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority) , with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). A condition considered by the environmental professional to be a controlled recognized environmental condition shall be listed in the findings section of the Phase I Environmental Site Assessment report, and as a recognized environmental condition in the conclusions section of the Phase I Environmental Site Assessment report."
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
ERNS	Emergency Response Notification System. An EPA-maintained federal database which stores information on notifications of oil discharges and hazardous substance releases in quantities greater than the applicable reportable quantity under CERCLA. ERNS is a cooperative data-sharing effort between EPA, DOT, and the National Response Center.
ESA	Environmental Site Assessment
FRP	Fiberglass Reinforced Plastic
Hazardous Substance	As defined under CERCLA, this is (A) any substance designated pursuant to section 1321(b)(2)(A) of Title 33, (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of this title; (C) any hazardous waste having characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (with some exclusions); (D) any toxic pollutant listed under section 1317(a) of Title 33; (E) any hazardous air pollutant listed under section 112 of the Clean Air Act; and (F) any imminently hazardous chemical substance or mixture with respect to which the EPA Administrator has taken action under section 2606 of Title 15. This term does not include petroleum, including crude oil or any fraction thereof which is not otherwise listed as a hazardous substance under subparagraphs (A) through (F) above, and the term include natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).
Hazardous Waste	This is defined as having characteristics identified or listed under section 3001 of the Solid Waste Disposal Act (with some exceptions). RCRA, as amended by the Solid Waste Disposal Act of 1980, defines this term as a "solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed."
HREC	Historical Recognized Environmental Condition is defined in ASTM E1527-13 as "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a historical recognized environmental condition, the environmental professional must determine whether the past release is a recognized environmental condition at the time of the Phase I Environmental Site Assessment is conducted (for example, if there has been a change in the regulatory criteria). If the EP considers the past release to be a recognized environmental condition at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a recognized environmental condition."
IC/EC	A listing of sites with institutional and/or engineering controls in place. IC include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls. EC include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.
ILP	Innocent Landowner/Operator Program
LQG	Large Quantity Generators
LUST	Leaking Underground Storage Tank. This is a federal term set forth under RCRA for leaking USTs. Some states also utilize this term.

Description of Selected General Terms and Acronyms

Term/Acronym	*Description*
MCL	Maximum Contaminant Level. This Safe Drinking Water concept (and also used by many states as a ground water cleanup criteria) refers to the limit on drinking water contamination that determines whether a supplier can deliver water from a specific source without treatment.
MSDS	Material Safety Data Sheets. Written/printed forms prepared by chemical manufacturers, importers and employers which identify the physical and chemical traits of hazardous chemicals under OSHA's Hazard Communication Standard.
NESHAP	National Emissions Standard for Hazardous Air Pollutants (Federal Clean Air Act). This part of the Clean Air Act regulates emissions of hazardous air pollutants.
NFRAP	Facilities where there is "No Further Remedial Action Planned," as more particularly described under the Records Review section of this report.
NOV	Notice of Violation. A notice of violation or similar citation issued to an entity, company or individual by a state or federal regulatory body indicating a violation of applicable rule or regulations has been identified.
NPDES	National Pollutant Discharge Elimination System (Clean Water Act). The federal permit system for discharges of polluted water.
NPL	The NPL is the EPA's database of uncontrolled or abandoned hazardous waste facilities that have been listed for priority remedial actions under the Superfund Program.
OSHA	Occupational Safety and Health Administration or Occupational Safety and Health Act
PACM	Presumed Asbestos-Containing Material. A material that is suspected of containing or presumed to contain asbestos but which has not been analyzed to confirm the presence or absence of asbestos.
PCB	Polychlorinated Biphenyl. A halogenated organic compound commonly in the form of a viscous liquid or resin, a flowing yellow oil, or a waxy solid. This compound was historically used as dielectric fluid in electrical equipment (such as electrical transformers and capacitors, electrical ballasts, hydraulic and heat transfer fluids), and for numerous heat and fire sensitive applications. PCB was preferred due to its durability, stability (even at high temperatures), good chemical resistance, low volatility, flammability, and conductivity. PCBs, however, do not break down in the environment and are classified by the EPA as a suspected carcinogen. 1978 regulations, under the Toxic Substances Control Act, prohibit manufacturing of PCB-containing equipment; however, some of this equipment may still be in use today.
pCi/L	picoCuries per Liter of Air. Unit of measurement for Radon and similar radioactive materials.
PLM	Polarized Light Microscopy (see ACM section of the report, if included in the scope of services)
PST	Petroleum Storage Tank. An AST or UST that contains a petroleum product.
Radon	A radioactive gas resulting from radioactive decay of naturally-occurring radioactive materials in rocks and soils containing uranium, granite, shale, phosphate, and pitchblende. Radon concentrations are measured in picoCuries per Liter of Air. Exposure to elevated levels of radon creates a risk of lung cancer; this risk generally increases as the level of radon and the duration of exposure increases. Outdoors, radon is diluted to such low concentrations that it usually does not present a health concern. However, radon can accumulate in building basements or similar enclosed spaces to levels that can pose a risk to human health. Indoor radon concentrations depend primarily upon the building's construction, design and the concentration of radon in the underlying soil and ground water. The EPA recommended annual average indoor "action level" concentration for residential structures is 4.0 pCi/l.
RCRA	Resource Conservation and Recovery Act. Federal act regulating solid and hazardous wastes from point of generation to time of disposal ('cradle to grave"). 42 U.S.C. 6901 et seq.
RCRA Generators	The RCRA Generators database, maintained by the EPA, lists facilities that generate hazardous waste as part of their normal business practices. Generators are listed as either large (LQG), small (SQG), or conditionally exempt (CESQG). LQG produce at least 1000 kg/month of non-acutely hazardous waste or 1 kg/month of acutely hazardous waste. SQG produce 100-1000 kg/month of non-acutely hazardous waste. CESQG are those that generate less than 100 kg/month of non-acutely hazardous waste.
RCRA CORRACTS/TSDs	The USEPA maintains a database of RCRA facilities associated with treatment, storage, and disposal (TSD) of hazardous materials which are undergoing "corrective action". A "corrective action" order is issued when there is a release of hazardous waste or constituents into the environment from a RCRA facility.
RCRA Non-CORRACTS/TSDs	The RCRA Non-CORRACTS/TSD Database is a compilation by the USEPA of facilities which report storage, transportation, treatment, or disposal of hazardous waste. Unlike the RCRA CORRACTS/TSD database, the RCRA Non-CORRACTS/TSD database does not include RCRA facilities where corrective action is required.

Description of Selected General Terms and Acronyms

Term/Acronym	*Description*
RCRA Violators List	RAATS. RCRA Administrative Actions Taken. RAATS information is now contained in the RCRIS database and includes records of administrative enforcement actions against facilities for noncompliance.
RCRIS	Resource Conservation and Recovery Information System, as defined in the Records Review section of this report.
REC	Recognized Environmental Conditions are defined by ASTM E1527-13 as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to any release to the environment; 2) under conditions indicative of a release to the environment. *De minimis* conditions are not recognized environmental conditions."
SCL	State "CERCLIS" List (see SPL /State Priority List, below).
SPCC	Spill Prevention, Control and Countermeasures. SPCC plans are required under federal law (Clean Water Act and Oil Pollution Act) for any facility storing petroleum in tanks and/or containers of 55-gallons or more that when taken in aggregate exceed 1,320 gallons. SPCC plans are also required for facilities with underground petroleum storage tanks with capacities of over 42,000 gallons. Many states have similar spill prevention programs, which may have additional requirements.
SPL	State Priority List. State list of confirmed sites having contamination in which the state is actively involved in clean up activities or is actively pursuing potentially responsible parties for clean up. Sometimes referred to as a State "CERCLIS" List.
SQG	Small Quantity Generator
SWF/LF	State and/or Tribal database of Solid Waste/Landfill facilities. The database information may include the facility name, class, operation type, area, estimated operational life, and owner.
TPH	Total Petroleum Hydrocarbons
TRI	Toxic Release Inventory. Routine EPA report on releases of toxic chemicals to the environment based upon information submitted by entities subject to reporting under the Emergency Planning and Community Right to Know Act.
TSCA	Toxic Substances Control Act. A federal law regulating manufacture, import, processing and distribution of chemical substances not specifically regulated by other federal laws (such as asbestos, PCBs, lead-based paint and radon). 15 U.S.C 2601 et seq.
USACE	United States Army Corps of Engineers
USC	United States Code
USGS	United States Geological Survey
USNRCS	United States Department of Agriculture-Natural Resource Conservation Service
UST	Underground Storage Tank. Most federal and state regulations, as well as ASTM E1527-13, define this as any tank, incl., underground piping connected to the tank, that is or has been used to contain hazardous substances or petroleum products and the volume of which is 10% or more beneath the surface of the ground (i.e., buried).
VCP	State and/or Tribal facilities included as Voluntary Cleanup Program sites.
VOC	Volatile Organic Compound

Description of Selected General Terms and Acronyms

Term/Acronym	*Description*
Wetlands	Areas that are typically saturated with surface or ground water that creates an environment supportive of wetland vegetation (i.e., swamps, marshes, bogs). The Corps of Engineers Wetlands Delineation Manual (Technical Report Y-87-1) defines wetlands as areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. For an area to be considered a jurisdictional wetland, it must meet the following criteria: more than 50 percent of the dominant plant species must be categorized as Obligate, Facultative Wetland, or Facultative on lists of plant species that occur in wetlands; the soil must be hydric; and, wetland hydrology must be present. The federal Clean Water Act which regulates "waters of the US," also regulates wetlands, a program jointly administered by the USACE and the EPA. Waters of the U.S. are defined as: (1) waters used in interstate or foreign commerce, including all waters subject to the ebb and flow of tides; (2) all interstate waters including interstate wetlands; (3) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, etc., which the use, degradation, or destruction could affect interstate/ foreign commerce; (4) all impoundments of waters otherwise defined as waters of the U. S., (5) tributaries of waters identified in 1 through 4 above; (6) the territorial seas; and (7) wetlands adjacent to waters identified in 1 through 6 above. Only the USACE has the authority to make a final wetlands jurisdictional determination.

APPENDIX B
EIR ADDENDUM NO. 8

CITY CONDITIONS OF APPROVAL

APPENDIX C
2007 EIR ADDENDUM NO. 1
MITIGATION MEASURES

2007 SBACSP EIR Addendum No. 1 – Summary of Mitigation Measures

AE-1 Prior to the issuance of any building permits, all development plans (e.g., site plans, tract maps, etc.) within the Southgate Warehouse Project area will be submitted to the San Bernardino International Airport for review and approval relative to building heights and potential lighting impacts. Building heights shall conform to the Specific Plan and/or Airport Land Use Handbook requirements, whichever is more restrictive. This measure shall be implemented to the satisfaction of the City Public Works Director.

BR-1 Prior to the issuance of grading permits for the Southgate Warehouse Project (SWP) site, the developer shall obtain either a Federal Endangered Species Act (FESA) Section 10(a) permit or ESA Section 7 Consultation with the U.S. Fish and Wildlife Service for potential impacts to San Bernardino kangaroo rat (SBKR) or Santa Ana River wooly star (SARWS). The project site is isolated and disturbed, so appropriate offsite SBKR and SARWS habitat shall be secured at a minimum 2:1 ration based on surveys prior to grading. This measure shall be implemented to the satisfaction of the City Planning Director.

BR-2 Loss of Riversidean alluvial fan sage scrub (RAFSS) habitat on the Southgate, Koo, Hubbs, and DFAS properties shall be mitigated by means of purchasing suitable RAFSS habitat offsite or in a mitigation bank at a minimum 1:1 ratio. This may apply to San Bernardino kangaroo rat (SBKR) as well. This measure shall be implemented to the satisfaction of the City Planning Director.

BR-3 Prior to issuance of grading permits on the Southgate Warehouse Project site, the applicant shall consult with the Regional Water Quality Control Board, U.S. Army Corps of Engineers, and California Department of Fish and Game, as appropriate, to obtain permits or approvals related to the Federal Clean Water Act and State Fish and Game codes, as applicable, and which may include appropriate mitigation at a minimum 2:1 replacement. This measure shall be implemented to the satisfaction of the City Planning Director.

BR-4 Prior to issuance of grading permits for the Southgate Warehouse Project property, a qualified biologist shall certify that the proposed layout of buildings and improvements on the project site are compatible with and do not restrict implementation of the Conservation Management Area (CMA) and Open Space Management Area (OSMA) plans in the immediate area. This conclusion shall be based on the results of current surveys for San Bernardino kangaroo rat (SBKR) and Santa Ana River woollystar (SARWS). This measure shall be implemented to the satisfaction of the City Planning Director.

LU-1 Prior to issuance of any building permits, the developer shall demonstrate that the entire specific plan development is within a buildout limit of 11.6 million square feet. This measure shall be implemented to the satisfaction of the City Planning Director.

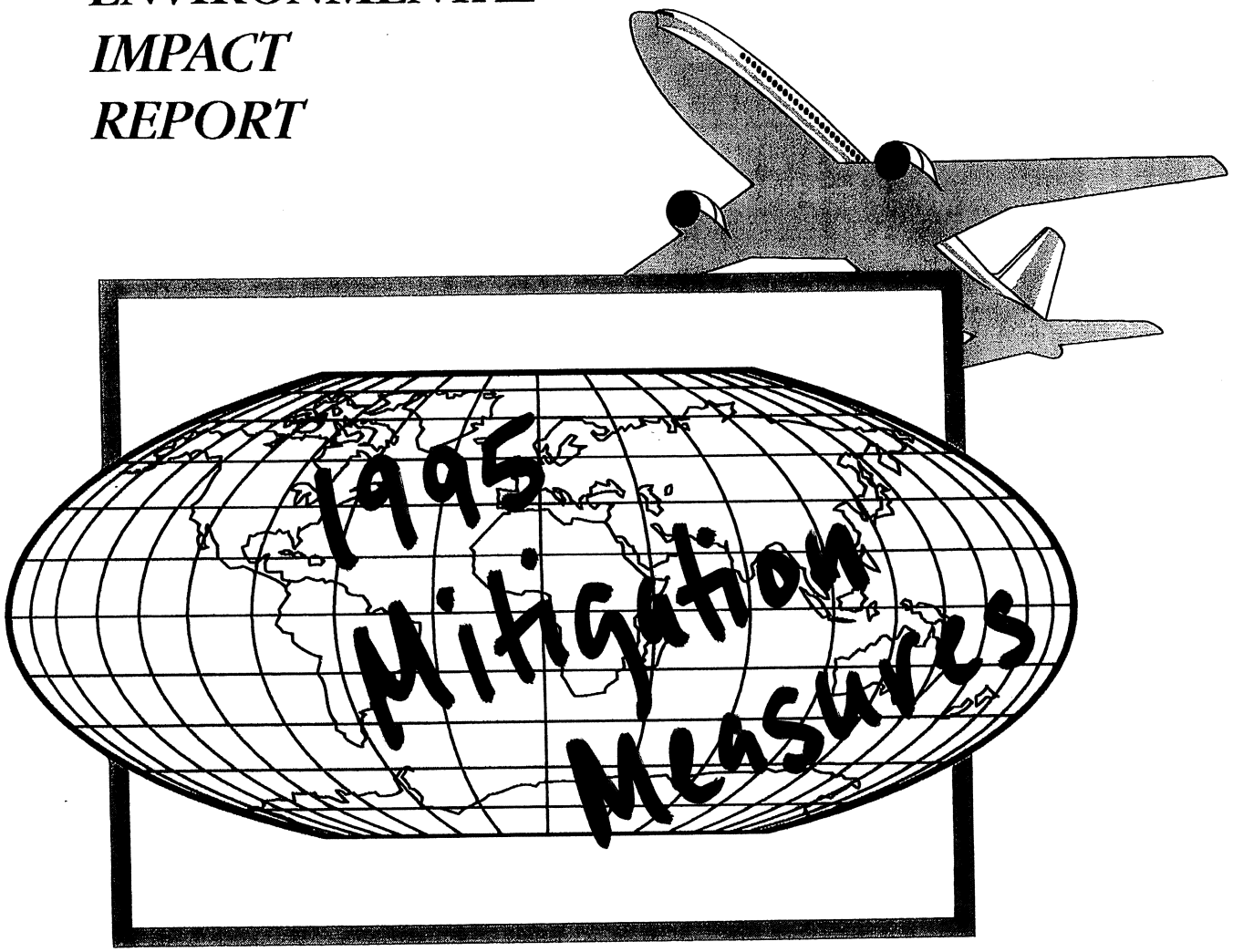
TR-1 The project proponent shall contribute toward the cost of necessary study area improvements on a fair-share basis, as further detailed in the two traffic studies prepared by Katz, Okitsu and Associates (KOA 2006a and 2006b) and the Katz, Okitsu and Associates Memo to Robert Eisenbeisz dated August 11, 2006. Fair-share contributions shall be paid with sufficient time to allow for improvements to be implemented in advance of the time needed to mitigate impacts. Payment schedule of fair-share costs will be determined by the City Public Works Director prior to issuance of building permits (this is an expansion of Mitigation Measure 7-1 from the 1995 EIR).

Note that funding from various sources (Federal, SANBAG, and Measure I) has been secured and allotted for roadway improvements in and around the SBACSP area, including specific improvements identified in the two traffic studies prepared by Katz, Okitsu and Associates. Therefore, the developer(s) may be exempt from certain fair-share improvements if those improvements have already been financed through the aforementioned sources. It shall be the responsibility of the developer to either pay their fair share or provide verification that the affected roadway improvements have been financed through outside sources and that the improvements are scheduled for implementation, prior to issuance of building permits. This measure shall be implemented to the satisfaction of the City Public Works Director.

APPENDIX D

1995 EIR MITIGATION MEASURES

DRAFT ENVIRONMENTAL IMPACT REPORT



San Bernardino International Trade Center

prepared for

City of San Bernardino
Department of Planning and Building Services

prepared by

LSA

1.1 PROJECT OBJECTIVES

The key objectives of the project include the following:

1. Replace lost jobs with new job generating uses and quality projects.

2. Integrate the Norton Air Force Base site back into the physical structure of the community.

3. Create a development plan that will have the effect of generating financial reinvestment on site and within the community.

1.2 PREVIOUS ENVIRONMENTAL APPROVALS

The SBITC site, along with the SBIA, has been the subject of several previous environmental reviews.

- In 1991, the IVDA prepared the *Inland Valley Development Agency Redevelopment Project Draft EIR* (IVDA, April, 1990), which addressed the reuse of the Norton Air Force Base at a conceptual level, along with the proposed redevelopment of 14,246 acres surrounding the base, consistent with adopted General Plans of the County and surrounding cities.

- In 1993, the U.S. Air Force prepared the *Final Environmental Impact Statement: Disposal and Reuse of Norton Air Force Base* (Department of the Air Force, June, 1993). The report addressed the impacts of the closure of the base consistent with federal environmental regulations under the National Environmental Policy Act (NEPA) and considered various options for reuse of the base, including an airport and a trade center.

- In 1993, the Airport Authority prepared an Initial Study for an interim operating plan for the SBIA. The Initial Study resulted in adoption of a Negative Declaration. The Interim Operating Plan is the current governing plan for near term flight operations at the SBIA.

- In January, 1995, the City of San Bernardino prepared an Initial Study for a General Plan Amendment and Development Code Amendment for the SBIAA portion of the Norton Air Force Base. The Initial Study determined that the impact of the General Plan Amendment and the Development Code Amendment were addressed in the 1990 IVDA EIR.

1.3 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table 1.A, which commences on page 1-7, summarizes project impacts, mitigation measures and significant unavoidable adverse impacts identified in this EIR. Potentially significant impacts that require mitigation include impacts to the following:

- Geology and Soils
- Hydrology
- Biological Resources
- Cultural and Scientific Resources
- Traffic and Circulation
- Air Quality
- Noise
- Hazardous Waste/Materials
- Public Services and Utilities.

For each of these potential impacts, mitigation measures are proposed or incorporated into the project design to reduce the extent of the environmental impact. With the following exceptions, these mitigation measures will reduce the extent of the impact to below a level of significance.

1. The project will contribute to cumulative noise increases along arterial roadways providing access to the site. Give the dispersed nature of the residential uses and the fact that many existing units take direct access from the arterial street, mitigation is not considered feasible.

2. The project will result in short-term impacts to air quality due to construction. (Note that any project of this size would have the same impacts.)

3. Project related emissions, when combined with emissions related to all other existing and planned projects in the South Coast Air Basins, will contribute to continued exceedances of State and federal air quality standards. (Again, any such project would have the same impact.)

This EIR also considers the no project alternative and alternatives that have been considered in previous planning studies for the site.

1.4 AREAS OF CONTROVERSY

Based upon the responses to the Notice of Preparation (NOP), the following are potential areas of controversy regarding the project.

- Traffic Generation
- Noise
- Groundwater Contamination
- Impacts to Sensitive Species
- Impacts to On-Site Landscaping

These areas are analyzed in this EIR.

1.5 ISSUES TO BE RESOLVED

The following issues need to be resolved by the Lead Agency:

1. Does this EIR adequately describe the environmental impacts of the project?

2. Do the benefits of the project override the environmental impacts?

3. Should the recommended mitigation measures be adopted or modified? Should additional mitigation measures be applied to the project?

4. Should the General Plan Amendment and Specific Plan be adopted?

Table 1A - Summary of Project Specific Impacts, Mitigation Measures, and Level of Significance After Mitigation

Potential Project Impacts		Mitigation Measures	Level of Significance After Mitigation
4.1 Geotechnical Resources			
The project will be subject to ground motion during the life of the structure.	1-1	Prior to the issuance of building permits, site specific geotechnical studies shall be prepared for all new construction on the site and for seismic retrofitting of existing structures on the site. The recommendations of such site specific geotechnical studies shall be incorporated into the design, engineering, and seismic retrofitting of all development, redevelopment of existing structures, and other construction projects on the site.	Mitigated below a level of significance.
On-site soils are subject to wind erosion.	1-2	Grading plans shall indicate that wind erosion shall be minimized, particularly in areas underlain by Tujunga Loamy Sand, through application of dust palliatives during grading and other construction or redevelopment activities.	Mitigated below a level of significance.
4.2 Water Resources			
The project shall result in the increased use of potable water.	2-1	Prior to the issuance of a building permit, the applicant shall demonstrate that all new construction complies with the latest requirements of the Uniform Building Code regarding water conservation.	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
The project may result in increased pollutants in water drainage from the site.	2-2 Prior to the issuance of a grading permit, the applicant shall demonstrate that on-site stormwater discharge will be mitigated sufficiently to maintain compliance with the City's NPDES Storm Water Discharge Permit Requirements. A Notice of Intent (NOI) shall be filed with the state Water Quality Control Board for construction disturbing five acres of more of land.	Mitigated below a level of significance.
The project may result in building within the 100 year floodplain and in increases in on-site and off-site drainage.	2-3 Prior to the approval of a building permit for any new construction within the Specific Plan, the applicant shall submit to the City the following documentation from a qualified engineer regarding on-site and off-site drainage: a) After grading, proposed first floor building elevations are located outside the 100 year flood plain. b) The on-site drainage system can accommodate drainage flows from the project site per standard City requirements (i.e., all flows contained within storm drains or within street curb lines). c) The off-site drainage system will not be adversely affected by the project. This can be demonstrated in one of the following ways:	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures		Level of Significance After Mitigation
	1)	The project will not result in any net increase in off-site storm flows.	
	2)	The downstream flood control system can accommodate any increase in storm flows that will occur as a result of the project.	
	3)	Any increase in storm flows from the project site are off-set by decreases from other sites within the Specific Plan that drain to the same off-site facilities.	
4.3 Biological Resources			
Development of the project as shown in the Specific Plan will impact sensitive biological elements on the site.	3-1	The project shall be redesigned to avoid all or portions of the following sensitive biological elements on site. (Note: this measure is an alternative to Mitigation Measures 3-2, 3-3, 3-4 and 3-5.)	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	Industrial Area-Northeast (5d) The boundary along the extreme eastern and southern end of this land use area should be redrawn to align with the edge of the concrete pad around the existing building. The proposed southern boundary also extends into Santa Ana River woolly star habitat. This boundary line should be redrawn further to the north. *Industrial Area-Southern (5b)* The proposed industrial design will include various sites along the southern boundary that impact a section of the Santa Ana River and the alluvial fan scrub habitat. There are at least two areas that clearly impact sensitive biological resources. The first area extends beyond the existing boundaries at the northeastern part of the golf course. The second area extends down the road leading from the golf course to Central Avenue. These extensions should be redrawn to match the existing boundaries of the golf course and should not extend south beyond the northern levee of the Santa Ana River.	

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	Industrial Area-Southwestern (5c) The third site is at the extreme southwestern corner of the site, south of Central Avenue. The southern half of this land use area impacts a number of sensitive biological resources. This land use area should be eliminated.	
	Recreational Open Space Area (7a) The proposed design may or may not impact the unnamed tributary to Warm Creek. Recommended mitigation is to ensure that project design does not require alteration or elimination of this unnamed drainage. If redesign is not possible, then mitigation for the loss of jurisdictional wetland will be required.	
	International Trade Center (8) The proposed design may or may not impact the unnamed tributary to Warm Creek. Recommended mitigation is to ensure that project design does not require alteration or elimination of this unnamed drainage. If redesign is not possible, then mitigation for the loss of jurisdictional wetland will be required.	

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	Although the amount of jurisdictional wetland for this area is only 1.0 acre, the proposed development will not be covered under a Nationwide Permit. Nationwide Permits are applicable only to an entire project. The proposed development of the International Trade Center is a part of the larger base reuse plan. The overall amount of wetland habitat lost as a result of the entire reuse plan will determine the need for permit action, the type of permit needed and the potential mitigation measures that will be required.	

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
The project may affect the habitat of sensitive species.	3-2 At the time of individual environmental assessments for all future project phases in all areas except the International Trade Center, the City, in consultation with a qualified biologist, shall determine whether additional spring surveys (April and May) are needed for individual project phases that are affected by construction and development activities. The purpose for subsequent surveys is to confirm the presence of any of the species listed below. These species may not have been previously identified either due to the timing of the surveys or because adequate surveys were not completed. The surveys, if needed, shall concentrate on areas within proposed limits of grading that may support targeted sensitive plant and animal species. The results of these surveys shall be documented in a report submitted to the City. The surveys shall focus on, but not be limited to, the following species: • Slender-horned spineflower • Parry's spineflower • Western burrowing owl • Los Angeles pocket mouse • Northwestern San Diego pocket mouse • San Bernardino Merriam's kangaroo rat.	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	In the event that these species are not present, or if they will not be significantly impacted by the development due to project design, no mitigation will be required. The following actions will be required if one or more of these species is detected during the surveys. For each sensitive plant species found within areas subject to project impacts, a detailed seeding/planting program shall be implemented. If agreeable to the resource agencies, the recommended mitigation shall be the transplantation and/or collection of seed from existing populations for ultimate use on a selected mitigation site. Specifications related to seed collection, planting, maintenance, and performance standards should be developed in accordance with consultation with these agencies. Transplantation of the two spineflower species would not be suitable because these species are annual.	

Potential Project Impacts		Mitigation Measures	Level of Significance After Mitigation
		For each sensitive wildlife species, the level of impact will need to be determined. If a determination is made that the impact will be significant, it is recommended that mitigation take the form of the replacement of lost habitat as determined appropriate by the CDFG and USFWS. Transplantation of individual animals is not recommended as a mitigation measure due to its very low success rate.	
The project proposes development in the Riverside Alluvial Fan Scrub habitat, which is considered a sensitive habitat.	3-3	Prior to the development of any areas containing Riverside Alluvial Fan Scrub, a mitigation plan shall be developed and approved by the resource agencies with jurisdiction over this habitat. Mitigation for this habitat will take the form of designated protected areas either on or off site to be set aside in perpetuity. The designation and protection of these areas shall be discussed with the CDFG. If off-site mitigation is not possible, replacement of lost habitat shall be required, to the satisfaction of the CDFG.	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures		Level of Significance After Mitigation
The project may result in development within existing wetland or riparian areas.	3-4	Prior to the development of any areas containing wetland or riparian resources, a mitigation plan shall be developed and approved by resource agencies with jurisdiction over this habitat. Mitigation for the loss of wetland/riparian habitat types will be provided by replacement with habitat of equal or greater area and value. Conceptually, this would entail the development of riparian habitat at a selected site that does not currently support wetland/riparian or other sensitive habitats. Species that should be considered for use in the riparian replacement site include native species such as mulefat, willows, and cottonwood trees and appropriate site-native understory species.	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	An integrated riparian habitat mitigation plan will be developed as part of the more detailed permitting/agreement processes with the Corps and CDFG and will include input from the USFWS and CDFG. Permit conditions that will be set forth by the Corps as part of the 404 permit process and by the CDFG in a Streambed Alteration Agreement will make habitat mitigation for these areas a legally binding obligation. The current policies of these agencies require projects to incorporate measures to replace or avoid riparian and wetland habitat so as to achieve no net loss of these sensitive resources. The riparian habitat mitigation plan submitted to the Corps and CDFG for approval will follow the "Habitat Mitigation and Monitoring Proposal Guidelines" established by the Corps, Los Angeles District in June, 1993. These guidelines include, but are not limited to, the following items: • A clear statement of the goals of the proposed mitigation plan that establishes the amount and type of habitat to be established.	

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	• The plan shall provide a description of each strategy proposed for establishment of replacement habitat and a brief explanation of the rationale behind each mitigation strategy to be employed. • Graphic exhibits will be included that precisely depict the location(s) and area(s) where habitat establishment shall be undertaken. Exhibits shall display engineer's plans for any earthwork required, including grading and contouring, and any hydrological management devices, such as drop structures, weirs, etc., that may be installed. • Plant palettes for the riparian habitat will be selected to replicate as closely as possible the native constituents of existing cottonwood/willow riparian woodland and mulefat scrub communities present within the impacted areas on the site.	

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	• The plan shall name the responsible parties and provide general implementation specifications establishing the mitigation project schedule and site preparation requirements. Specifications for the establishment of appropriate native vegetation shall include timing of planting, standards for plant materials, planting techniques, spacing, irrigation (if any), site maintenance, supervision and documentation, and performance standards.	
	• The plan shall describe planned maintenance activities on the planting site(s), including irrigation system inspection, plant replacement, pest control, and removal of weeds and trash.	
	• The plan shall set forth the monitoring methods and performance criteria to be used to determine whether the plan has achieved its goals. Success criteria will establish the target functions and values the mitigation site habitat is intended to provide.	

Potential Project Impacts		Mitigation Measures	Level of Significance After Mitigation
		Final mitigation site design plans will be subject to agency approval. Implementation of the measures outlined above, which is expected to be required as part of the project permit conditions, will mitigate the project's impacts on both Streambed Resources and Riparian Habitat to below a level of significance.	
Project construction may result in incidental impacts to biologically sensitive elements.	3-5	Prior to development in areas of sensitive biological habitat, a qualified biologist or other natural resources specialist (e.g., arborist) shall be retained as a construction monitor, to ensure that incidental construction impacts on biological resources are avoided, or limited to a minimum. Monitoring should occur in those sections of the aviation/airport related use, golf course/industrial and industrial areas that are currently undeveloped open space. Typical responsibilities of the construction monitor include the following: • Monitor shall attend at least one meeting prior to the pre-grade conference(s) to ensure that timing/location of construction activities do not conflict with mitigation requirements (e.g., seasonal surveys for plants, reptiles, etc.).	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	• Prior to commencement of grading: 1. Review/designate the construction area in the field with the contractor and the designated inspector in accordance with the final grading plan approved by the appropriate agency. Haul roads and access roads should be sited within grading areas identified in the California Environmental Quality Act (CEQA) documentation. If activities outside these limits are necessary, they should be evaluated for consistency with the CEQA documentation. 2. Supervise cordoning of preserved natural areas that lie outside grading areas identified in CEQA documentation (e.g., with temporary fence posts and colored rope). Fence posts or similar obstructions should be located outside of active streambed channels.	

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	3. Conduct a field review of the staking (to be set by the surveyor) designating the limits of all construction activity. Any construction activity areas immediately adjacent to riparian areas or other sensitive resources may be flagged or temporarily fenced by the monitor, at his discretion.	
	4. Conduct an educational session with the contractor (including field superintendent and other key construction personnel) and designated inspector, describing the importance of restricting work to designated areas. The monitor should also discuss procedures for minimizing harm/harassment of wildlife encountered during construction.	

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	• Construction personnel should be prohibited from entry into areas outside the designated construction area, except for necessary construction related activities, such as surveying. All such construction activities should be coordinated with the monitor.	
	• The monitor should be present periodically on the site during construction to coordinate and monitor compliance with the above provisions.	
	• Upon completion of construction, the contractor should be held responsible to restore any haul roads and access roads that are outside of approved grading limits. This restoration should be done in consultation with the monitor.	

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	• If construction activities are conducted during the nesting/ breeding season (typically February through July), the construction monitor should, at the pre-grade conference for each phase of grading, determine: 1) the need for, and 2) the frequency of, monitoring for nesting birds protected by the Migratory Bird Treaty Act and/or Endangered Species Act. If monitoring is determined to be necessary, the qualified specialist should monitor construction activities in the designated areas. Any bird nests discovered should be reported to the appropriate agency, project applicant, and any necessary State or federal agencies. Removal of observed nests should be done only in compliance with the federal Migratory Bird Treaty Act and Endangered Species Act, or applicable permits.	

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
Project operation may result in incidental impacts to adjacent biologically sensitive areas.	3-6 Prior to development in areas adjacent to sensitive biological habitat, evidence shall be presented by the project applicant, to the Director of Planning and Building Services that prospective occupants and users of redevelopment areas have been clearly advised of the implications of human activity adjacent to natural open space areas. To accomplish this, the project applicant, or agents and assigns, should prepare a written statement that includes discussions of the following types of issues: • Warnings of dangers and nuisances posed by wildlife that may forage at the development edge (e.g., coyotes in the Santa Ana River). • Responsibilities and benefits associated with development near a wildland area. • Fuel modification and fire management plan as approved by the Fire Chief. Fuel modification areas typically extend outside proposed development boundaries. Additional impacts to sensitive resources may occur as a result.	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures		Level of Significance After Mitigation
		• Development of a lighting plan to minimize light spillage in areas adjacent to open space areas, including the golf course to be approved by the City Engineer. • Eliminate use of rodenticide. This statement should be written to foster an appreciation of native ecosystems, and to identify measures that should be taken to minimize conflicts between wildlife, domestic animals, and humans.	
The project may involve the use of rodenticides to control rodent populations.	3-7	Prohibit expanded use beyond current levels of rodenticides in or near areas of potential habitat for San Bernardino Merriam's kangaroo rat and other sensitive rodent species. Where practicable, reduce or eliminate existing use of rodenticides near these areas.	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures		Level of Significance After Mitigation
Project landscape elements could adversely affect existing native species.	3-8	Prior to approval of any landscape plans, evidence shall be presented to the Director of Planning and Building Services that the project applicant, or agents and assigns, have prepared landscape design guidelines that describe adverse ecological effects associated with non-native, invasive plants. These guidelines should be provided to all proposed land users and used during the review and approval process for all landscaping plans. Disposal of cuttings of any ornamental plants in on-site or off-site open space areas should be strictly prohibited. Use of non-native, invasive plants should be controlled, as described in the following sections.	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	Prohibited Species Non-native plants that are potentially invasive via airborne seeds, or that are particularly difficult to control once escaped, should be prohibited from all parts of the project, including the golf course. Such species include, but are not limited to, the following: • Tree-of-heaven (*Ailanthus* spp.) • Giant reed (*Arundo donax*) • Garland chrysanthemum (*Chrysanthemum coronarium*) • Pampas grass (*Cortaderia* spp.) • Brooms (*Cytisus* spp.) • Bermuda buttercup (*Oxalis pes-caprae*) • Fountain/Kikuyu grass (*Pennisetum* spp.) • German ivy (*Senecio mikanoides*) • Periwinkle (*Vinca* spp.) • Tamarisk (*Tamarix* spp.) • Sprangle top (*Lamarckia aurea*)	

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	Permitted Species Some invasive, exotic species are known to be controllable in well managed habitat preserves. Such species may be used in project landscaping and golf course plantings, if a qualified biologist approves the species and proposed use, and the proposed use of herbicides, pesticides and rodenticides. Non-native, invasive species that could be used under these circumstances include, but are not limited to, the following: • Hottentot-fig (*Carpobrotus edulis*)[1] • Bermuda grass (*Cynodon dactylon*)[2] • Myoporum (*Myoporum laetum*) • Pepper trees (*Schinus* spp.). • Cape honeysuckle (*Tecomaria capensis*).[1]	

1 Should be prohibited in areas adjacent to natural open spaces.

2 Hybrid Bermuda grass, which is sterile or produces only sterile seed, should be permitted on golf course fairways, tees, or greens, when surrounded by an appropriate buffer or an apron of non-invasive grass species (to prevent vegetative spread into natural areas).

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
4.4 Cultural Resources		
No potential project impacts.	No mitigation measures required.	
4.5 Land Use/Relevant Planning		
The project may result in land use conflicts between existing residential units (on-site and off-site) and proposed industrial and commercial uses.	5-1 Prior to the approval of building permits for any Specific Plan land uses within 100 feet of existing residential uses (including on-site residential units utilized for an interim period), the project proponent shall take measures to ensure the compatibility of the proposed use with the existing residential uses. Such measures shall include, but are not limited to: • Establishment of a minimum setback of 50 feet from any proposed buildings to existing residential units. • Restrictions on the use of residential streets by industrial/commercial traffic. The measures will be reviewed and approved by the Planning Director, City of San Bernardino (or his designee) prior to the approval of building permits for such uses.	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
The project proposes industrial development adjacent to the Santa Ana River.	5-2 Prior to the issuance of building permits for any industrial uses in parcels abutting the Santa Ana River, IVDA shall prepare and the City shall review and approve a set of detailed design standards for development along the river edge to ensure that the proposed uses will not adversely affect the recreational, water resource, or biological resources along the river. Said standards shall establish the following: • Minimum building setbacks from riverbanks. • Minimum setbacks from biologically sensitive areas. • Architectural treatments for facilities adjacent to the river to ensure visual compatibility.	Mitigated below a level of significance.
4.6 Hazardous Waste/ Hazardous Materials		
The project may result in new development in or around IRP sites.	6-1 Prior to the approval of any building permit or grading permit within the project area, the applicant shall provide written evidence to the Planning and Building Services Director, City of San Bernardino, that the Air Force has released the site for development, and that the proposed development will not hinder efforts to clean up the TCE plume.	Mitigated to below a level of significance.

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
New uses may involve hazardous materials and the potential for improper disposal of hazardous waste.	6-2 Prior to the approval of any building permit or grading permit within the project area, the applicant shall provide written evidence to the Planning and Building Services Director, City of San Bernardino, that an individual site survey meeting City of San Bernardino requirements for hazardous waste has been conducted.	Mitigated to below a level of significance.

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
4.7 Transportation/Circulation		
The project will result in increased traffic flows resulting from automobiles accessing the site.	7-1 Any Specific Plan project shall contribute, on a fair share basis, to mitigation of traffic impacts. Contributions shall be by one of the following: a) Implementation of the recommended intersection, traffic lane or freeway improvements listed. b) Payment of dollar equivalent of the improvements to specific fund for said improvements. c) Implementation of additional capacity on parallel routes to offset impacts on existing routes. Such additional capacity shall be approved by the City prior to implementation credits being allowed.	

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	The City recognizes a total of 46,520 vehicle trips from the predevelopment status of the Base. Implementation or mitigation measures shall not be required until this level of trips is generated from the Specific Plan area. Exception to the above will apply where intersections or lane configurations operate below level of service D. The SBITC will implement an aggressive TDM program throughout the SBITC to further mitigate potential vehicle trip impacts of the project, but will rely on actual field conditions and counts to determine level of service and intersection capacity.	
	7-2 Prior to the approval of more than 100,000 gross square feet of new development on the site, the IVDA shall adopt a Transportation Demand Management (TDM) program to reduce the overall trip generation of the project. Elements of the TDM shall include measures to implement the following: a) Establishment of an on-site transportation center to distribute information on alternative transit modes and facilitate car-pooling.	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures		Level of Significance After Mitigation
		b) Development of a Master Plan of bus stops and construction of bus turn-outs within the project street system.	
		c) Provision of preferred parking for car-pools for all project sites.	
		d) Provision of bicycle commuting facilities such as bicycle racks and/or lockers.	
4.8 Noise			
Project construction will result in short-term noise increases.	8-1	Construction shall be restricted to between 7:00 a.m. and 7:00 p.m. on weekdays (8:00 a.m. and 7:00 p.m. on Saturday). No construction shall take place on Sundays or federal holidays.	Mitigated below a level of significance.
	8-2	Construction equipment (both fixed and mobile) shall be equipped and maintained with properly functioning mufflers.	
	8-3	Stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive areas.	
	8-4	Temporary noise barriers shall be used when construction is to be performed within 450 feet of residential units or 250 feet of commercial units.	

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	8-5 Low noise level equipment shall be utilized.	
	8-6 Noisy activities shall be planned to occur together, whenever practical.	
The project will contribute to cumulative noise increases along existing roadways accessing the site. This cumulative impact will adversely affect existing sensitive uses (i.e., residential units) adjacent to these roadways.	No mitigation is considered feasible.	This impact will remain significant.
4.9 Air Quality		
Project construction will result in the short-term emission of air pollutants (Mitigation Measures 9-1 through 9-9).	9-1 Prior to the issuance of any grading or building permits, the project sponsor shall submit to the City a mitigation plan for both exhaust and dust impacts. No construction will be conducted prior to acceptance of this plan. The following (or other suitable measures) shall be included in this plan. The City shall verify use of the plan measures during regular site inspections.	After implementation of Mitigation Measures 9-1 through 9-9, project construction impacts to air quality will remain significant.
	9-2 Grading plans shall indicate that on-site grading will be limited to a total of six acres per day.	

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	9-3 Grading plans shall indicate that the contractor shall be responsible for ensuring that trucks used for hauling excess material are covered to minimize loss of material, flagmen assist trucks moving into traffic, and peak hour truck travel is minimized.	
	9-4 The dust control plan shall be included as part of the grading plan and shall specify steps that would be taken to comply with SCAQMD Rules 402 (Nuisance) 403 (Fugitive Dust). Measures outlined in the plan shall include but not be limited to: daily watering of graded areas, washing of equipment tires before leaving the construction site, and use of SCAQMD approved chemical stabilizers or soil binders.	
	9-5 The grading plan shall indicate that during construction, the contractor shall discontinue construction activities during first and second stage smog alerts, or when wind gusts exceed 25 miles per hour.	

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	9-6 The grading plan shall indicate that all construction equipment shall be maintained in good operating condition so as to reduce operational emissions. The contractor will ensure that all construction equipment is being properly serviced and maintained.	
	9-7 Prior to approval of a grading permit, the contractor shall provide evidence that low emission mobile construction equipment will be utilized, or that their use was investigated and found to be infeasible for the project.	
	9-8 Roadway and parking lot plans shall indicate the use emulsified asphalt or asphaltic cement, where feasible. The use of cutback asphalt should be avoided whenever possible.	

Potential Project Impacts	Mitigation Measures		Level of Significance After Mitigation
	9-9	Where feasible and/or applicable, the project proponent shall: 1) specify construction materials with natural finishes that do not require coating; 2) where coatings are to be applied, specify the use of high-volume low-pressure or manual application of paints and coatings on structures; 3) use pre-finished or pre-primed and sanded wood molding and trim products and pre-primed wallboard; and 4) specify the use of non-polluting power-coating operations and power-coated metal projects.	
The long-term operation of the project will result in the emission of air pollutants from vehicles accessing the site and energy consumption on the site. Note: the project will also result in a long-term air quality benefit by providing job opportunities in close proximity to existing housing, thereby reducing commute lengths and resulting emissions. Mitigation Measures 9-10 through 9-12 seek to further reduce the extent of project related emissions.	9-10	Prior to the approval of more than 100,000 square feet of cumulative development, the project sponsor shall develop a commuter center, which would include such information as: bus and rail transit schedules/maps; telephone numbers for the designated transportation coordinator; Omnitrans bus route and Metrolink schedules; ridesharing promotional material; bicycle route and facility information; location of, and directions to, the San Bernardino Metrolink station schedule; and location of on-site vanpool/carpool spaces.	Mitigated below a level of significance.
	9-11	Configure parking areas to minimize traffic interference by providing adequate ingress and egress.	See above.

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
	9-12 Prior to the approval of a building permit, the project sponsor shall demonstrate that building and landscape plans include the following: • Thermal load reduction through the use of automated time clocks and/or occupant sensors. • The utilization of window glazing, wall insulation, and efficient ventilation methods. • The utilization of energy efficient heating, air conditioning, water heaters, furnaces, boiler units, etc. • The incorporation of passive solar design and solar heaters, where appropriate. • Landscape with native, drought resistant species to reduce water consumption and provide passive solar benefits.	See above.

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
4.10 Public Services and Utilities		
The project will result in increased demand for capital improvements for police and fire prevention services.	10-1 The project proponent shall pay the project's fair-share portion of fees to the City to cover additional capital improvement costs for police protection and fire prevention services. Facilities may be provided in lieu of payment of fees. The appropriate fee share or facilities will be specified in a project finance plan to be approved by the City. Until such time as a project finance plan is approved, project specific agreements between the City and IVDA may be negotiated to ensure adequate facilities for police and fire services.	Mitigated below a level of significance.
	10-2 Project design plans will incorporate security features, such as adequate night lighting around building exteriors (per City standards), low-vegetation landscaping and clear drive up areas for emergency vehicles. The adequacy of the security features will be reviewed as part of the plan check process; the project design must be approved by the City as part of the project review process (prior to issuance of building permits).	

Potential Project Impacts	Mitigation Measures		Level of Significance After Mitigation
The project may result in water supply requirements in excess of the Master Plan.	10-3	Specific Plan development that would exceed nine million square feet (combined with development on the SBIA site) will require evaluation of the system in place at that time to determine the need for any additional water service facilities. If additional facilities are required, the IVDA will coordinate with the City of San Bernardino Municipal Water Department to specify the additional water demand to be generated by the development expansion, and the extent of any additional system facilities that would be required. The IVDA will secure confirmation of service capability from the Water Department to serve the additional development above nine million square feet, but not exceeding 11 million square feet as specified in the Norton Air Force Base Master Plan.	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures		Level of Significance After Mitigation
The project may result in sewer demand that exceeds planned capacity.	10-4	Development in excess of nine million square feet or that generates wastewater over one million gallons per day in the connection line to the City's sewerage system will require evaluation of the system in place to determine the potential need for additional sewer service facilities. In the event that the project system requires expansion, the IVDA will arrange with the City of San Bernardino Municipal Water Department to provide for the necessary additional facilities. The IVDA will secure confirmation of service capability from the Department to serve the additional development beyond eight million square feet as specified in the Norton Air Force Base Master Plan and/or one million gallons per day in the City connection line.	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures		Level of Significance After Mitigation
The Golf Course area (Area 20 of the Utility Master Plan) may require special considerations for the provision of sewer services.	10-5	Engineering analysis will be conducted and design plans prepared for a gravity flow sewerage system adequate to contain and distribute the projected development wastewater flow from the golf course area. The system will be designed to connect with the balance of the sewerage system on site, as well as the City sewer lines off site. Plans will be submitted to the City Public Works Department for review during the plan check period. Approval of the final design plans shall be required prior to issuance of building permits for planned development in the golf course area (Area 20).	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures		Level of Significance After Mitigation
Existing water lines and facilities may be subject to breakage and/or leakage.	10-6	A Facilities Repair and Maintenance Plan shall be prepared and submitted to the City of San Bernardino Municipal Water Department. The plan shall specify repair and preventative maintenance tasks for the water lines and facilities, such as clearing out of existing pipes, repairing line breaks, videotaping conditions inside the pipes, and relining the existing pipes when appropriate during project phasing. The plan will identify responsible party for task implementation, frequency of maintenance and oversight review/check for adequacy. The plan will be approved by the City prior to issuance of project building permits.	Mitigated below a level of significance.
Build out of the project may result in solid waste generation in excess of planned capacity.	10-7	Provision of solid waste collection services for development beyond eight million square feet within the project will be evaluated by the IVDA in coordination with the City. Prior to construction of phases of the project that would generate solid waste service demand above the capacity of existing resources, the IVDA will implement the City's adopted program to reduce solid waste production, pursuant to A.B. 939.	Mitigated below a level of significance.

Potential Project Impacts	Mitigation Measures	Level of Significance After Mitigation
The project will require the installation of electrical, gas, and telephone services.	10-8 During the project design review process (each phase as submitted), final design plans will be submitted to all pertinent utility providers (e.g., Southern California Edison, The Gas Company, General Telephone) for review and determination of ability to service the proposed project. Receipt of written verification from the utility providers of ability to serve the project will be required prior to issuance of building permits.	Mitigated below a level of significance.

APPENDIX E

2016 TRANSLUTIONS TRAFFIC STUDY

LENA ROAD & MILL STREET

TRAFFIC IMPACT ANALYSIS

PREPARED FOR:

HILLWOOD
901 Via Piemonte, Suite 175
Ontario, California 91764

AND

Southstar Engineering
1700 Iowa Avenue, Suite 250
Riverside, California 92507

PREPARED BY:

translutions
the transportation solutions company...

translutions, inc.
17632 Irvine Boulevard, Suite 200
Tustin, California 92780
(949) 656-3131

NOVEMBER 1, 2016

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Purpose of the Analysis and Study Objectives 1
1.2 Project Location & Study Area 1
2.0 PROJECT DESCRIPTION 5
2.1 Project Trip Generation 5
2.2 Project Trip Distribution & Assignment 7
3.0 LOS DEFINITIONS, PROCEDURES, AND THRESHOLDS 7
3.1 Intersection Vehicular Levels of Service 7
3.2 Intersection Non-automobile Modes Levels of Service 13
3.3 Levels of Service Thresholds 13
4.0 VOLUME DEVELOPMENT METHODOLOGY 13
4.1 Existing Traffic Volumes 13
4.2 Opening Year Traffic Volumes 14
4.3 Cumulative Traffic Volumes 14
4.4 Year 2040 Traffic Volumes 14
4.5 Existing, Opening Year, Cumulative, and Year 2040 With Project Traffic Volumes 15
5.0 EXISTING CONDITIONS 15
5.1 Existing Roadway Conditions 15
5.2 Existing Transit Service 15
5.3 Existing Pedestrian & Bicycle Facilities 16
5.4 Existing Intersections Levels of Service 16
5.5 Existing Plus Project Intersections Levels of Service 16
6.0 OPENING YEAR CONDITIONS 21
6.1 Opening Year Roadway Conditions 21
6.2 Opening Year Transit Service 21
6.3 Opening Year Pedestrian & Bicycle Facilities 21
6.5 Opening Year With Project Intersections Levels of Service 21
7.0 CUMULATIVE CONDITIONS 21
7.1 Cumulative Roadway Conditions 21
7.2 Cumulative Transit Service 21
7.3 Cumulative Pedestrian & Bicycle Facilities 25
7.4 Cumulative Intersections Levels of Service 25
7.5 Cumulative With Project Intersections Levels of Service 25
8.0 YEAR 2040 CONDITIONS 25
8.1 Year 2040 Roadway Conditions 25

8.2 Year 2040 Transit Service 25
8.3 Year 2040 Pedestrian & Bicycle Facilities 25
8.4 Year 2040 Intersections Levels of Service 25
8.5 Year 2040 With Project Intersections Levels of Service 31
9.0 CIRCULATION IMPROVEMENTS 31
10.0 IMPACT ANALYSIS FOR CEQA DETERMINATION 31
9.0 SUMMARY & CONCLUSIONS 37

APPENDICES
Appendix A: Traffic Counts
Appendix B: Detailed Volume Development Worksheets
Appendix C: Level of Service Worksheets

FIGURES AND TABLES

FIGURES

Figure 1: Regional Project Location 2
Figure 2: Project Site Plan 3
Figure 3: Study Intersections 4
Figure 4: Project Auto Trip Distribution 8
Figure 5: Project Truck Trip Distribution 9
Figure 6: Project Passenger Car Trip Assignment 10
Figure 7: Project Truck Trip Assignment (in PCEs) 11
Figure 8: Project Total Trip Assignment (in PCEs) 12
Figure 9: Existing Lane Geometrics & Stop Control 17
Figure 10: Existing Traffic Volumes 18
Figure 11: Existing Plus Project Traffic Volumes 20
Figure 12: Opening Year Without Project Traffic Volumes 22
Figure 13: Opening Year With Project Traffic Volumes 24
Figure 14: Cumulative Without Project Traffic Volumes 26
Figure 15: Cumulative With Project Traffic Volumes 28
Figure 16: 2040 Without Project Traffic Volumes 29
Figure 17: 2040 With Project Traffic Volumes 32

TABLES

Table A: Project Trip Generation 6
Table B: Intersection Automobile Mode LOS Criteria 7
Table C: Intersection Non-Automobile Mode LOS Criteria 13
Table D: Existing Levels of Service 19
Table E: Opening Year Levels of Service 23
Table F: Cumulative Levels of Service 27
Table G: 2040 Levels of Service 30

Table H: Existing With Improvements Levels of Service 33
Table I: Opening Year With Improvements Levels of Service 34
Table J: Opening Year Cumulative With Improvements Levels of Service 35
Table K: 2040 With Improvements Levels of Service 36

1.0 INTRODUCTION

This report presents the methodology, findings and conclusions of the Traffic Impact Analysis (TIA) prepared for the proposed Lena Road & Mill Street warehousing project (the project). The proposed project encompasses an approximately 19.8-acre site located on the east side of Lena Road north of Mill Street in the City of San Bernardino in San Bernardino County. The project proposes the construction of approximately 477,000 square feet of warehousing uses.

1.1 Purpose of the Analysis and Study Objectives

This report is intended to satisfy the requirements for a TIA established by the San Bernardino County Congestion Management Program (CMP), adopted November 3, 1993, and last revised in 2015, as well as the requirements for the disclosure of potential impacts and mitigation measures per the California Environmental Quality Act (CEQA). The San Bernardino County CMP is implemented by the San Bernardino Associated Governments (SANBAG).

The CMP requires analysis of off-site intersections potentially affected by the project, which the CMP defines as intersections at which the project is forecast to add 50 or more peak hour trips. This report evaluates eleven intersections under eight analysis scenarios, and proposes circulation improvements for intersections that operate or are forecast to operate at unsatisfactory levels of service. In addition, this reports also evaluates alternative modes of travel in the vicinity of the project.

1.2 Project Location & Study Area

As stated earlier, the project is located on the east side of Lena Road north of Mill Street in the City of San Bernardino in San Bernardino County. Figure 1 shows the regional location of the project. The project proposes the construction of approximately 477,000 square feet of warehousing uses, and is planned to open in 2018. Figure 2 illustrates the site plan of the proposed project.

Based on the trip generation and trip distribution of the proposed project, and based on discussion with City staff, this report analyzes the following 11 intersections for traffic operations:

1. Interstate 215 (I-215) Southbound (SB) Ramps and Inland Center Drive;
2. I-215 Northbound (NB) Ramps and Inland Center Drive;
3. I-215 NB Ramps and Mill Street;
4. S E Street/ Inland Center Drive and W Mill Street;
5. S Arrowhead Avenue and W Mill Street;
6. S Waterman Avenue and E Mill Street;
7. Lena Road and E Mill Street;
8. Tippecanoe Avenue and E Mill Street;
9. Lena Road and Project North Driveway;
10. Lena Road and Project Central Driveway; and
11. Lena Road and Project South Driveway.

Figure 3 illustrates intersections included in the TIA.

1.3 Analysis Scenarios

Based on the City of San Bernardino Guidelines and discussion with City staff, this report analyzes traffic conditions for the following eight scenarios:

1. Existing Conditions;
2. Existing Plus Project Conditions;

FIGURE 1

Lena Road and Mill Street
Regional Project Vicinity

translutions
the transportation solutions company

Regional Project Vicinity.mxd - 10/25/16

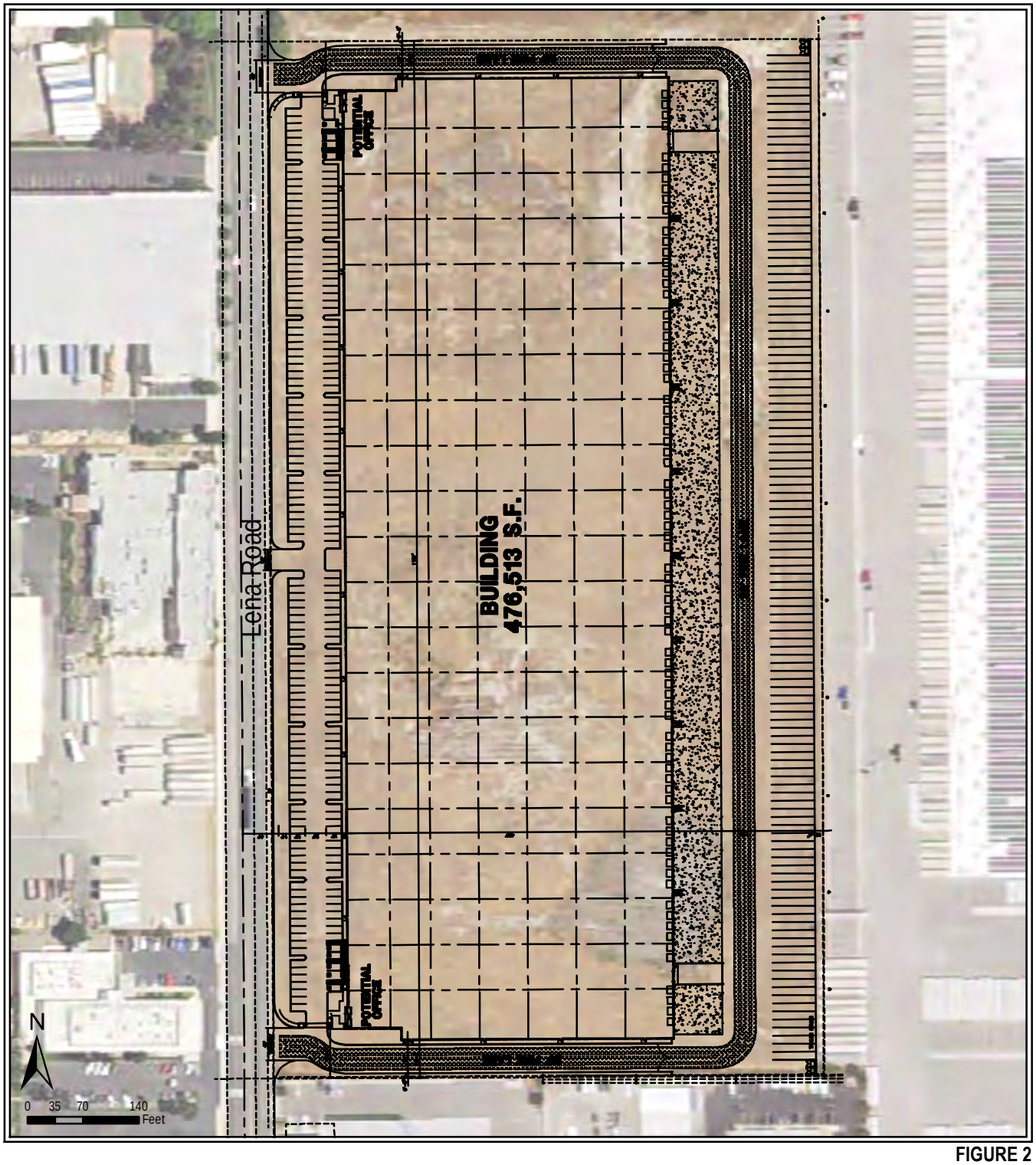


FIGURE 2

Lena Road and Mill Street
Site Plan

translutions
the transportation solutions company...

Site Plan.mxd - 10/25/16

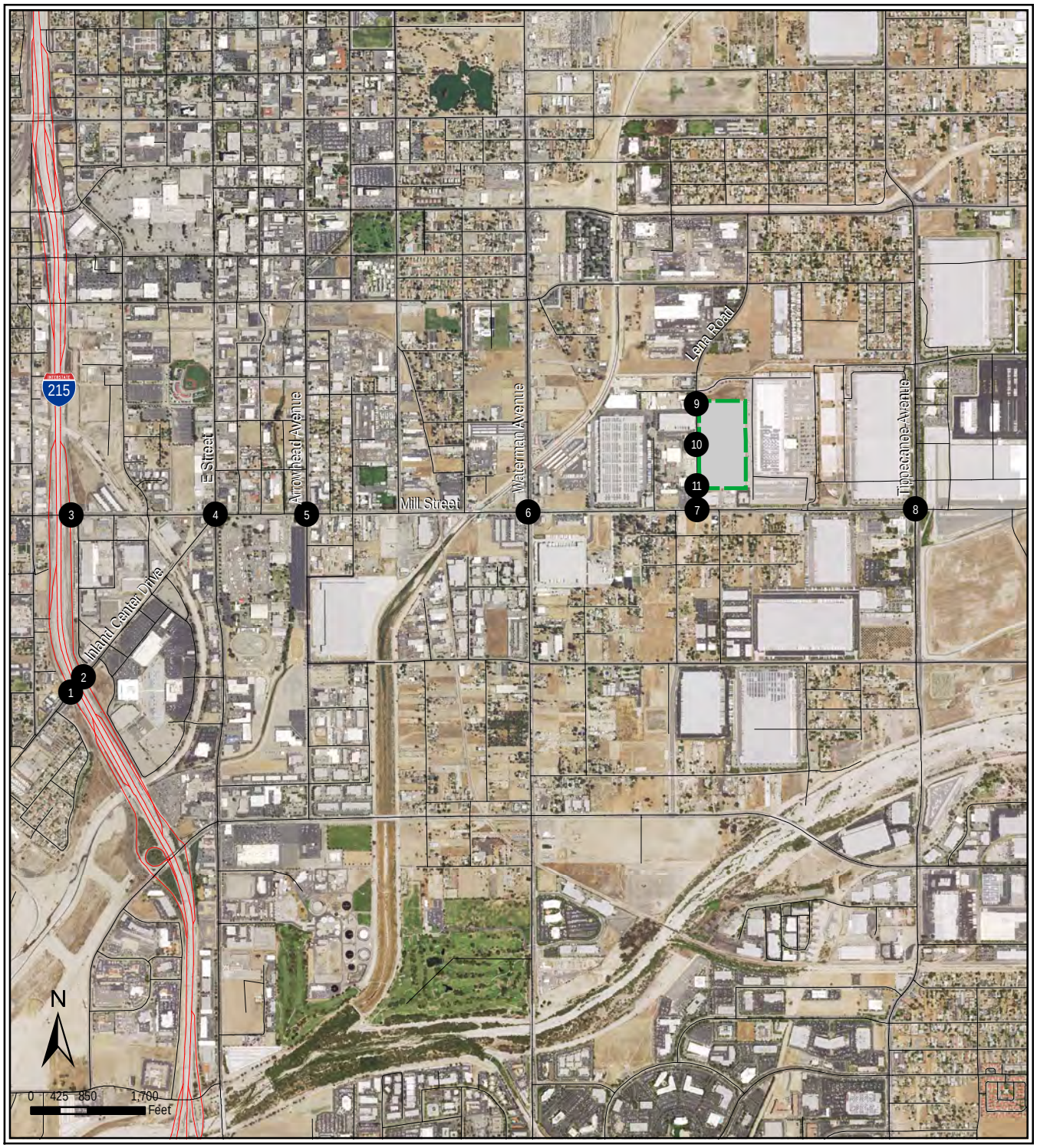


FIGURE 3

Legend

Study Intersections

Project Boundary

Lena Road and Mill Street
Study Area Intersections

translutions
the transportation solutions company...

Study Area Intersections.mxd - 10/25/16

3. Opening Year Base Conditions (Existing Plus Ambient Growth Traffic Condition);
4. Opening Year Base Plus Project Conditions (Project Opening Year Base plus Project Traffic Condition)
5. Opening Year Cumulative Conditions (Project Opening Year Base plus Other Proposed Projects Traffic Condition);
6. Opening Year Cumulative Plus Project Conditions (Project Opening Year Base plus Other Proposed Projects plus Project Traffic Condition);
7. Year 2040 Conditions (Future Build-out Year Cumulative Base Traffic Condition); and
8. Year 2040 Plus Project Conditions (Year 2040 plus Project Traffic Condition).

Consistent with City requirements, this report analyzes weekday a.m. and p.m. peak hour conditions. The a.m. peak hour is defined as the one hour of highest traffic volumes occurring between 7:00 and 9:00 a.m. The p.m. peak hour is defined as the one hour of highest traffic volumes occurring between 4:00 and 6:00 p.m.

2.0 PROJECT DESCRIPTION

The project site is currently undeveloped. As discussed earlier, the project will construct a 477,000 square-foot warehousing building on approximately 18.2 acres of land. Access to the project will be provided via three driveways on Lena Road. The north and south driveways will provide truck and automobile access, whereas the central driveway will provide only automobile access. To accommodate trucks, the north and south driveways are designed for a width of 40 feet and the central driveway has a width of 26 feet. Previously referenced Figure 2 illustrates the conceptual site plan for the proposed project.

2.1 Project Trip Generation

Total trip generation for high cube warehouse facilities are based on trip generation rates for Land Use 152 - "High-Cube Warehouse" from Institute of Transportation Engineers' (ITE) Trip Generation (9th Edition). Typically, in the Inland Empire, traffic generated by warehousing projects is further classified into automobile and truck traffic using trip generation rates included in the Fontana Truck Study (2003) or the National Association of Industrial and Office Properties (NAIOP) study (2005). These studies show that approximately 20.43% of the total traffic is truck traffic and the remaining is passenger car traffic. Subsequent to these studies, the South Coast Air Quality Management District (AQMD) has submitted comments to several projects in the area, contending that the trip generation is likely to be higher than those obtained from the ITE Trip Generation Manual. The AQMD had also commissioned a trip generation study to identify trip generation rates for high cube uses. Although the AQMD survey showed that the trips were similar to those identified in the ITE Trip Generation Manual, the AQMD has made an interim recommendation that the ITE trip generation rates be used for total vehicles, and truck traffic be forecast based on the AQMD surveys. The truck splits from the AQMD truck study result in a higher truck percentage. Based on the AQMD survey, of the total trip generation, approximately 38.1% are trucks and the remaining 61.9% is automobile traffic. Further, San Bernardino Associated Governments (SANBAG) requires that trucks be classified based on axle-type. Typically, the Fontana Truck Study is used to develop these forecasts. The Fontana Truck Study shows that approximately 17% of the truck traffic is comprised of 2-axle trucks, 23% of 3-axle trucks, and the remaining 60% of 4+-axle trucks. The truck trips were converted to axle type based on the above truck splits.

Truck trips were converted to Passenger Car Equivalents using the City of San Bernardino conversion rates of 2.0 for 2-axle trucks, 2.5 for 3-axle trucks and 3.0 for 4+ axle trucks. As shown in Table A, the project is expected to generate 52 trips in the a.m. peak hour, 57 trips in the p.m. peak hour, and 801 daily trips, which translate to 86 PCE trips during the a.m. peak hour, 93 PCE trips during the p.m. peak hour, and 1,324 daily PCE trips.

translutions
the tranportation solutions company...

Table A - Proposed Project Trip Generation

Land Use	Units[1]		Peak Hour						Daily
			AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
High-Cube Warehouse	477	TSF							
Trip Generation Rates[2]			0.076	0.034	0.110	0.037	0.083	0.120	1.680
PCE Inbound/Outbound Splits			69%	31%	100%	31%	69%	100%	50%/50%
Passenger Car Equivalent Rates Calculations - Rates									
Passenger Cars									
Recommended Mix (%)[3]			61.90%	61.90%	61.90%	61.90%	61.90%	61.90%	61.90%
PCE Factor[4]			1.0	1.0	1.0	1.0	1.0	1.0	1.0
PCE Rates			0.047	0.021	0.068	0.023	0.051	0.074	1.040
2-Axle Trucks									
Recommended Mix (%)[3]			6.45%	6.45%	6.45%	6.45%	6.45%	6.45%	6.45%
PCE Factor[4]			2.0	2.0	2.0	2.0	2.0	2.0	2.0
PCE Rates			0.010	0.004	0.014	0.005	0.011	0.015	0.217
3-Axle Trucks									
Recommended Mix (%)[3]			8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%
PCE Factor[4]			2.5	2.5	2.5	2.5	2.5	2.5	2.5
PCE Rates			0.016	0.007	0.024	0.008	0.018	0.026	0.363
4-Axle Trucks									
Recommended Mix (%)[3]			22.99%	22.99%	22.99%	22.99%	22.99%	22.99%	22.99%
PCE Factor[4]			3.0	3.0	3.0	3.0	3.0	3.0	3.0
PCE Rates			0.052	0.024	0.076	0.026	0.057	0.083	1.159
Total Trips									
Passenger Cars			22	10	32	11	24	35	496
2-Axle Trucks			2	1	3	1	3	4	52
3-Axle Trucks			4	1	5	2	3	5	69
4-Axle+ Trucks			8	4	12	4	9	13	184
Total Vehicle Trips			36	16	52	18	39	57	801
Final Rates (In Passenger Car Equivalents)									
Passenger Cars			0.047	0.021	0.068	0.023	0.051	0.074	1.040
2-Axle Trucks			0.010	0.004	0.014	0.005	0.011	0.015	0.217
3-Axle Trucks			0.016	0.007	0.024	0.008	0.018	0.026	0.363
4-Axle+ Trucks			0.052	0.024	0.076	0.026	0.057	0.083	1.159
Total PCE Rate			0.126	0.056	0.182	0.062	0.137	0.198	2.779
Total PCE Trips									
Passenger Cars			22	10	32	11	24	35	496
Truck PCE									
2-Axle Trucks			5	2	7	2	5	7	103
3-Axle Trucks			7	4	11	3	9	12	173
4-Axle+ Trucks			25	11	36	12	27	39	552
Truck PCE			37	17	54	17	41	58	828
Total PCE			59	27	86	28	65	93	1,324

[1] TSF = Thousand Square Feet

[2] Rates based on Land Use 152 - "High-Cube Warehouse" from Institute of Transportation Engineers (ITE) *Trip Generation* (9th Ed.).

[3] Recommended Truck Percentage from SCAQMD, Truck Mix Percentages per City of Fontana Truck Trip Generation Study for Heavy Warehouse uses, August 2003

[4] Recommended PCE Factor per City of San Bernardino Guidelines

2.2 Project Trip Distribution & Assignment

Trip distribution patterns for the proposed project were developed based on location of local and regional destinations and in consultation with City staff. Figure 4 shows the trip distribution for project automobile trips, and Figure 5 shows the distribution of truck trips. The project trip generation was applied to the trip distribution patterns for the proposed project to develop trip assignments for new project trips. Figure 6 shows the assignment of new passenger car trips at the study intersections. Figure 7 shows the assignment of new truck trips (in PCEs) at the study intersections. Figure 8 shows the total project trip assignment (in PCEs) at the study intersections.

3.0 LOS DEFINITIONS, PROCEDURES, AND THRESHOLDS

Level of service (LOS) is a measure of the quality of operational conditions within a traffic stream, and is generally expressed in terms of such measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Levels range from A to F, with LOS A representing excellent (free-flow) conditions and LOS F representing extreme congestion. Consistent to the guidelines, the Highway Capacity Manual (HCM) procedures have been used to evaluate levels of service. This section discusses the LOS definitions, procedures, and thresholds used in this report.

3.1 Intersection Vehicular Levels of Service

The analysis of traffic operations at intersections was conducted according to the Highway Capacity Manual 2010 (HCM2010) delay methodologies, which is described in the Highway Capacity Manual (Transportation Research Board, Washington, D.C., December 2010). Under the HCM methodology, LOS for signalized intersections is based on the average delay experienced by vehicles traveling through an intersection, whereas for unsignalized intersections, the LOS is based on the worst approach where the minor leg has a shared lane and on the worst movement where the minor leg has dedicated turn lanes. Table B presents a brief description of each level of service letter grade, as well as the range of delays associated with each grade.

Table B: Intersection Automobile Mode LOS Criteria

LOS	Description of Drivers' Perception and Traffic Operation	Delay in Seconds	
		Unsignalized	Signalized
A	This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤ 10	≤ 10
B	This level is assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	> 10 and ≤ 15	> 10 and ≤ 20
C	This level is typically assigned when progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	> 15 and ≤ 25	> 20 and ≤ 35
D	This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	> 25 and ≤ 35	> 35 and ≤ 55
E	This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	> 35 and ≤ 50	> 55 and ≤ 80
F	This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	> 50	> 80

Source: *Highway Capacity Manual, 2010*

FIGURE 4

XX%(YY%) Inbound%(Outbound%) Distribution

Lena Road and Mill Street
Project Auto Trip Distribution

translutions
the tranportation solutions company...

C:\Dropbox\Tsols\Projects\Hillwood - Lena&Mill\Analysis\Z30 Project Dist Auto.xlsx (10/31/2016)

FIGURE 5

XX%(YY%) Inbound%(Outbound%) Distribution

Lena Road and Mill Street
Project Truck Trip Distribution

translutions
the tranportation solutions company...

C:\Dropbox\Tsols\Projects\Hillwood - Lena&Mill\Analysis\Z30 Project Dist Truck.xlsx (10/31/2016)

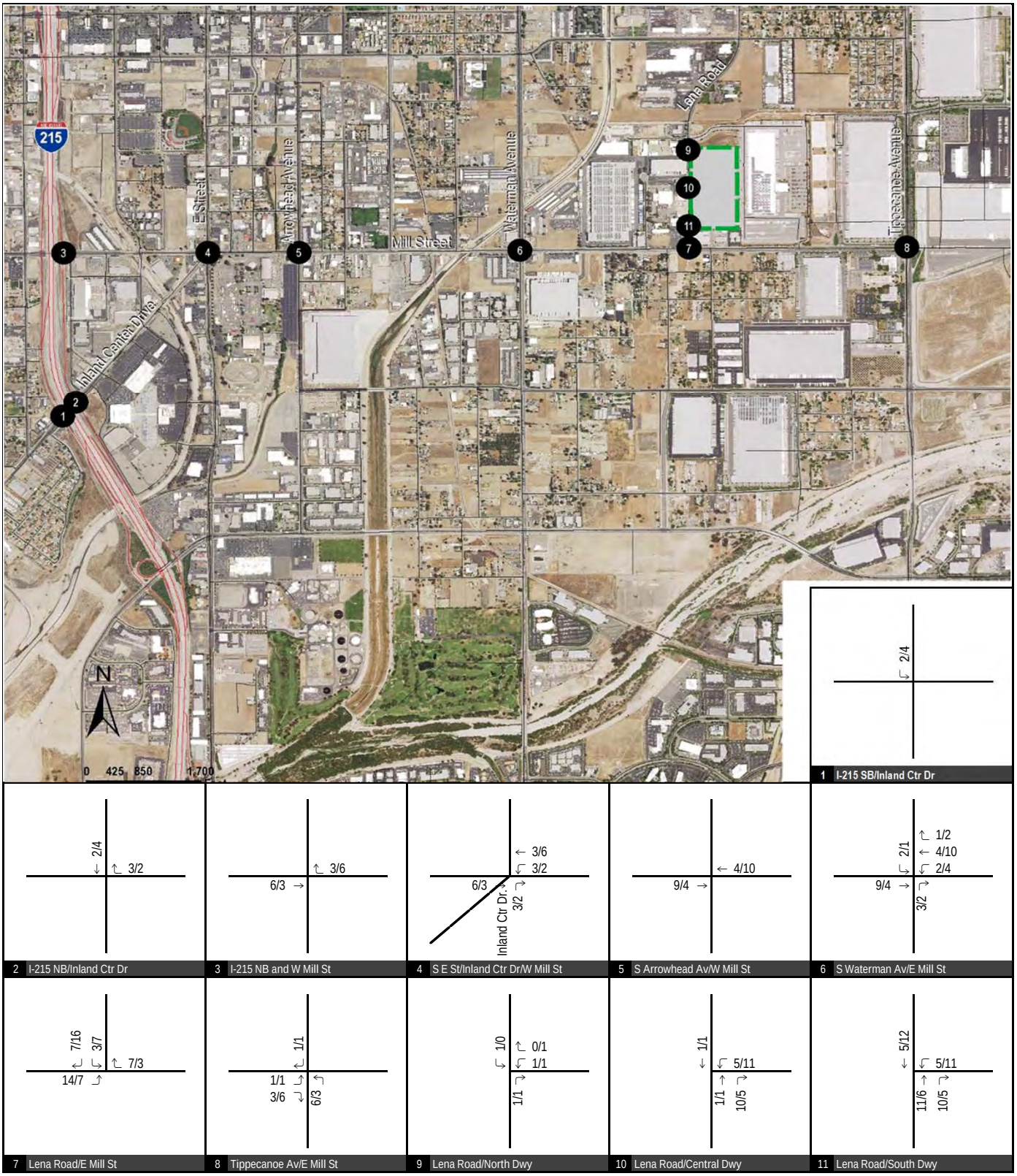


FIGURE 6

XX/YY AM/PM Trips

Lena Road and Mill Street
Project Auto Trip Assignment

translutions
the tranportation solutions company...

C:\Dropbox\Tsols\Projects\Hillwood - Lena&Mill\Analysis\Z30 Auto Trips.xlsx (10/31/2016)

FIGURE 7

XX/YY AM/PM Trips

Lena Road and Mill Street
Project Truck Trip Assignment (in PCEs)

translutions
the tranportation solutions company...

C:\Dropbox\Tsols\Projects\Hillwood - Lena&Mill\Analysis\Z30 Truck Trips.xlsx (10/31/2016)

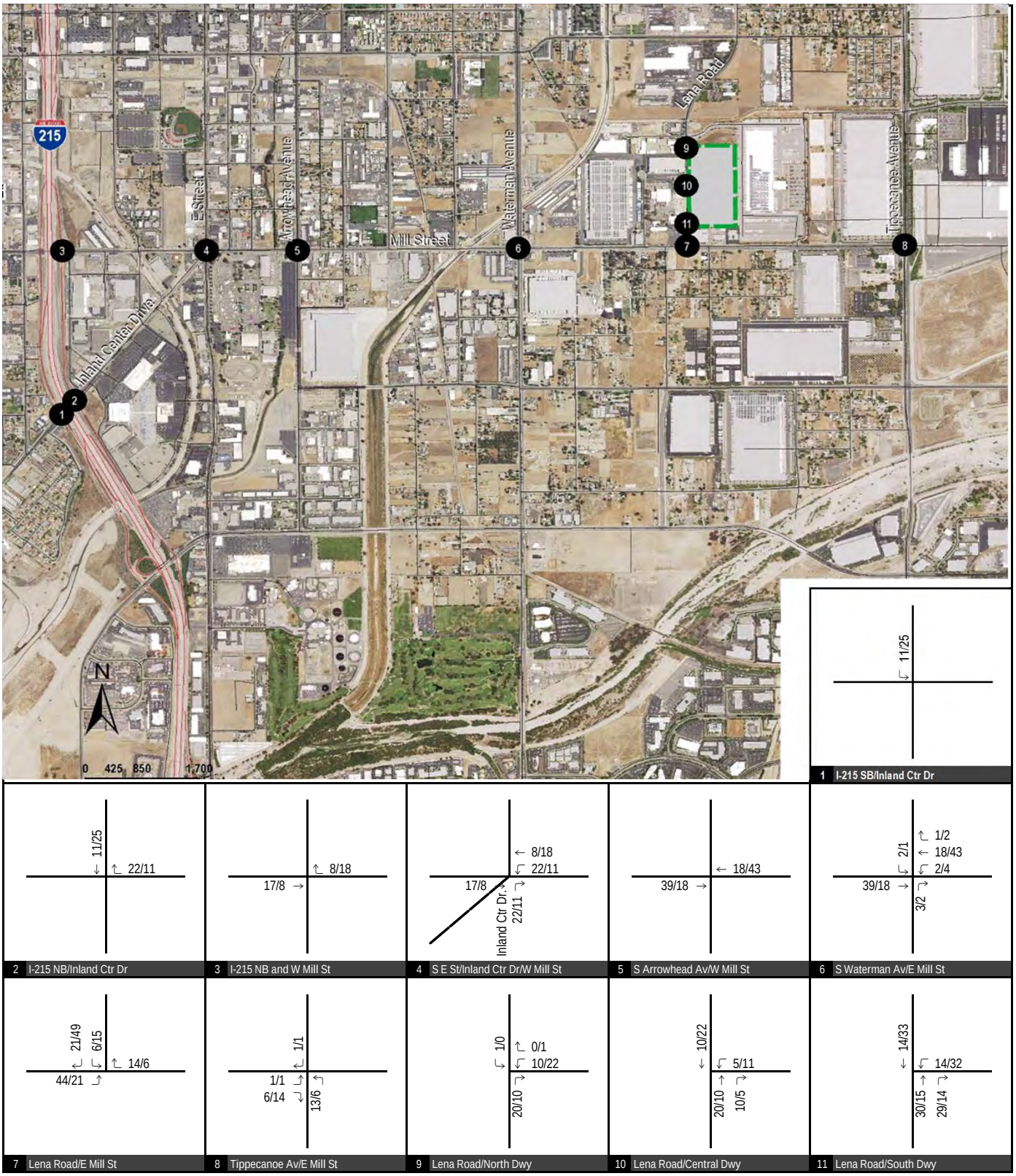


FIGURE 8

XX/YY AM/PM Trips

Lena Road and Mill Street
Project Total Trip Assignment (Auto + Truck PCEs)

translutions
the tranportation solutions company...

C:\Dropbox\Tsols\Projects\Hillwood - Lena&Mill\Analysis\Z30 Total Trips.xlsx (10/31/2016)

3.2 Intersection Non-automobile Modes Levels of Service

Historically, the HCM has used a single performance measure as the basis for defining LOS. However, research documented in the HCM, indicates that travelers consider a wide variety of factors in assessing the quality of service provided to them. Some of these factors can be described as performance measures (e.g., speed) and others can be described as basic descriptors of the intersection character (e.g., crosswalk width). The methodology for evaluating each mode provides a procedure for mathematically combining these factors into a score. This score is then used to determine the LOS that is provided.
Table C lists the range of scores associated with each LOS for the pedestrian and bicycle travel modes. The association between score value and LOS is based on traveler perception research. Travelers were asked to rate the quality of service associated with a specific trip through a signalized intersection.

Table C: Intersection Non-Automobile Mode LOS Criteria

LOS	LOS Score
A	≤ 2
B	> 2 and ≤ 2.75
C	> 10 and ≤ 3.5
D	> 10 and ≤ 4.25
E	> 10 and ≤ 5.00
F	> 5.00

Source: *Highway Capacity Manual, 2010*

3.3 Levels of Service Thresholds

The CMP standard level of service for intersections is LOS E. All study intersections are under the jurisdiction of the City of San Bernardino. The City of San Bernardino uses LOS D as the minimum level of service standard for intersection operations. Therefore, study intersections in the City of San Bernardino operating at LOS E, or F are required to be mitigated to LOS D or better. There are no thresholds in the CMP or in the City of San Bernardino for non-automobile modes. This report applies the City of San Bernardino automobile LOS threshold of LOS D for non-automobile modes.

The City of San Bernardino identifies significant impacts based on a sliding scale using vehicle-to-capacity ratios (v/c). Specifically, when the pre-project LOS is LOS C, the project is allowed to increase the v/c by 0.04, if the LOS is D the project is allowed to increase the v/c by 0.02, and if the pre-project LOS are E or F, the project is allowed to increase the v/c by 0.01. A significant impact occurs if the project related increase in v/c is greater that those listed above. Under Existing, Opening Year (Existing + Ambient Growth) Conditions, Opening Year Cumulative (Existing + Ambient Growth + Cumulative Projects) Conditions and mitigation measures are identified to offset project specific impacts. For 2040 conditions, improvements have been recommended to maintain General Plan LOS thresholds.

4.0 VOLUME DEVELOPMENT METHODOLOGY

Forecast traffic volumes at study intersections were developed based on discussion with City staff and consistent with the guidelines in the CMP. This section discussed the methodology used to develop traffic volumes used in the analysis.

4.1 Existing Traffic Volumes

Existing traffic volumes are based on peak hour intersection turn movement counts collected by National Data and Surveying Services in April 2014. Count sheets are contained in Appendix A. Vehicle classification counts (e.g., passenger vehicle, 2-axle truck, 3-axle truck, and 4 or more axle truck), including pedestrian and vehicle counts were conducted at all analysis intersections. Consistent to the Guidelines, PCE volumes at these intersections were

computed using a PCE factor of 2.0 for 2-axle trucks, 2.5 for 3-axle trucks, and 3.0 for trucks with 4 or more axles. Detailed volume development worksheets are included in Appendix B.

4.2 Opening Year Traffic Volumes

Based on the City's Guidelines, traffic volumes for Opening Year Conditions (Project Opening Year Base Traffic Condition) were developed by applying a growth rate of 3% per annum. Detailed volume development worksheets are included in Appendix B.

4.3 Cumulative Traffic Volumes

Based on the City's Guidelines, traffic volumes for Cumulative Conditions (Project Opening Year Base plus Other Proposed Projects Traffic Condition) were developed by adding traffic volumes from cumulative projects to the project Opening Year traffic volumes. The City's development activity sheet from September 1, 2016 was used to identify cumulative projects. The City's list includes 90 current and approved projects. 24 projects that could add traffic to any of the study intersections were identified. A list of these cumulative projects is included in Appendix B. Trip generation and assignment of cumulative project trips are also included in Appendix B.

4.4 Year 2040 Traffic Volumes

Based on the City's Guidelines, traffic volumes for year 2040 conditions have been developed using the San Bernardino Traffic Analysis Model. The base year for the traffic model is 2008 and the forecast year is 2035. The difference between the modeled 2008 and 2035 peak period directional arterial traffic volumes (for each intersection approach and departure) was identified from loaded network model plots. This difference defines the growth in traffic over the 27-year period. This incremental growth in peak period approach and departure volumes was factored to develop the incremental change in peak hour volumes. The SBTAM uses a three-hour a.m. peak period and a four-hour p.m. peak period. Southern California Association of Governments (SCAG), the regional Metropolitan Transportation Organization (MPO) has established that the a.m. peak hour comprises 38 percent of the a.m. peak period and that the p.m. peak hour comprises 28 percent of the p.m. peak period. Therefore, the incremental changes in peak period volumes were multiplied by the appropriate factor to develop incremental changes in peak hour volumes. The incremental growth in approach and departure volumes between 2008 and 2035 was factored to reflect the forecast growth between the year of the ground counts (2016) and 2040. For this purpose, linear growth between 2008 and forecast 2035 (and beyond) was assumed. Since the increment between 2016 and 2040 is 24 years of the 27-year time span, a factor of 0.89 (i.e., 24/27) was used. This forecast growth in approach and departure volumes were added to the 2016 ground counts, resulting in post-processed forecast year 2040 link volumes.

Forecast year 2040 turn volumes were developed using existing turn volumes and the future approach and departure volumes, based on the methodologies contained in *National Cooperative Highway Research Program Report (NCHRP) 255: Highway Traffic Data for Urbanized Area Project Planning and Design* (Transportation Research Board, December 1982). At some locations, forecast turning movements were forecast to be less than those under opening year conditions. This can be attributed to network improvements, planned transit, or changes in land use. To present a more conservative analysis, year 2035 turning movements lower than opening year cumulative turning movements have been adjusted by applying a growth rate based on the average growth rates from the study intersections included in the model from opening year conditions (2018) to 2040. Since NCHRP 255 methodology is

applicable for up to 4-legs, forecast traffic volumes for the intersection of Mill Street/Inland Center Drive/E Street was developed by applying growth rates from the SBTAM.

4.5 Existing, Opening Year, Cumulative, and Year 2040 With Project Traffic Volumes

Traffic volumes for existing, opening year, and cumulative with project conditions were developed by adding the trip assignment to the corresponding (i.e. existing, opening year, and cumulative) without project traffic volumes.

5.0 EXISTING CONDITIONS

This section discusses the existing transportation conditions in the study area.

5.1 Existing Roadway Conditions

Regional access to the project site is provided by Interstate 10 to the south, Interstate 215 to the west, and State Route 210 to the north. Local access is provided by the following roadways:

- Mill Street is oriented in the east-west direction and is currently a 4-lane roadway with a raised median between Tippecanoe Avenue and Lena Road. It terminates as the driveway to the Mattel facility on the east side of Tippecanoe Avenue.
- Lena Road is oriented in the north-south direction and is a 4-lane roadway with a two-way left turn lane near the project site.
- Inland Center Drive is oriented in the southwest-northeast direction with its northerly terminus at Mill Street, forming a 5-legged intersection with Mill Street and E Street.
- Arrowhead Avenue is oriented in the north-south direction and is a 4-lane roadway with a two-way left turn lane near the study area.
- E Street is oriented in the north-south direction and is a 4-lane roadway with an additional two Bus Only lanes near the study area.
- Waterman Avenue is oriented in the north-south direction and currently a 6-lane roadway with a painted median north of Mill Street and is generally a 4-lane roadway with a raised median south of Mill Street.
- Tippecanoe Avenue is oriented in the north-south direction and currently a 4-lane undivided roadway north of 3rd Street, a 5-lane roadway (3 northbound lanes and two southbound lanes) with a raised median between 3rd Street and Harry Shepard Boulevard, and a 6-lane roadway with a raised median between Harry Shepard Boulevard and Central Avenue.

5.2 Existing Transit Service

Public transportation services within the City of San Bernardino and near the proposed project include bus transit service (Omnitrans) and commuter rail transportation (Metrolink). These services are further described below.

- Bus Service. Public transportation in the City of San Bernardino is mainly provided by Omnitrans, which is the regional transit operator in San Bernardino County.
- Route 8 provides service near the project site. Route 8 connects the project site to Redlands, Yucaipa, and the San Bernardino 4th Street Transfer Center. Near the study area, Route 8 travels along Tippecanoe Avenue and Mill Street. Route 8 operates at 30 minute headways during the week and at 60 minute headways on the weekend. The nearest stop is near the intersection of Lena Road/Mill Street.

- The sbX Green Line travels along the E Street Corridor, from Cal State University San Bernardino at the north to Loma Linda University & Medical Center at the south. Service is weekdays, Monday through Friday, with service every 10 minutes during peak hours and every 15 minutes during off-peak hours. The northbound peak period is from 6:00 A.M. to 9:00 A.M. and from 3:00 P.M. to 6:00 P.M. The Southbound peak period is from 6:00 A.M. to 9:00 A.M. and from 2:00 P.M. to 6:00 P.M. The nearest stop is near the intersection of E Street/Mill Street.
- Route 5 serves the City of San Bernardino, connecting the northern portion of Loma Linda to Cal State San Bernardino. Headways are 30 minutes during weekdays and 60 minutes on weekends. The nearest stop is near the intersection of Waterman Avenue/Mill Street.

Commuter Rail Service. Commuter rail service is provided by Metrolink, which is operated by the Southern California Regional Rail Authority (SCRRA). Metrolink train service is available between the counties of Ventura, Los Angeles, San Bernardino, Orange, Riverside, and north San Diego. The area is served by the San Bernardino Line, which runs east-west between the San Bernardino Station and the Los Angeles Union Station. The San Bernardino Station is the nearest Metrolink station to the project site and is approximately 3.5 miles from the project site.

5.3 Existing Pedestrian & Bicycle Facilities

Pedestrian circulation in San Bernardino is primarily provided via sidewalks. With the exception Lena Road which has sidewalks only on the west side of the roadway, all other roadways have sidewalks along both sides. There are no designated bike facilities in the vicinity of the project site. Based on the counts conducted for this analysis, there is nominal bicycle and pedestrian activity at the study intersections.

5.4 Existing Intersections Levels of Service

An intersection level of service analysis was conducted for existing conditions to determine current circulation system performance using SANBAG saturation flow rates for intersections. Figure 9 shows the lane geometrics and stop controls at the study intersections. Existing traffic volumes at study intersections are shown in Figure 10. Detailed volume development worksheets are included in Appendix B. The existing levels of service for the study area intersections are summarized in Table D. Level of service calculation worksheets are contained in Appendix C. As shown in Table D, all study area intersections are currently operating at satisfactory levels of service, except for the intersection of I-215 Northbound Ramps/Mill Street, which operates at a delay of greater than 45 seconds, although it still operates at LOS D. Pedestrian LOS at all signalized intersections operate at acceptable levels of service.

5.5 Existing Plus Project Intersections Levels of Service

An intersection level of service analysis was conducted for existing plus project conditions to determine circulation system performance. Existing plus project traffic volumes at study intersections are shown in Figure 11. Roadway geometrics under existing plus project conditions have been assumed to be the same as under existing conditions, and intersections that currently do not exist have been assumed to have single shared lanes at each approach with stop controls. The existing plus project levels of service for the study area intersections are summarized in Table D. Level of service calculation worksheets are contained in Appendix C. As shown in Table D, all study area intersections are currently operating at satisfactory levels of service, except for the intersection of I-215 Northbound Ramps/Mill Street, which operates at a delay of greater than 45 seconds, although it still operates at LOS D. The project related increase in v/c ratio at this intersection is less than the threshold, and the project does not create a significant impact.

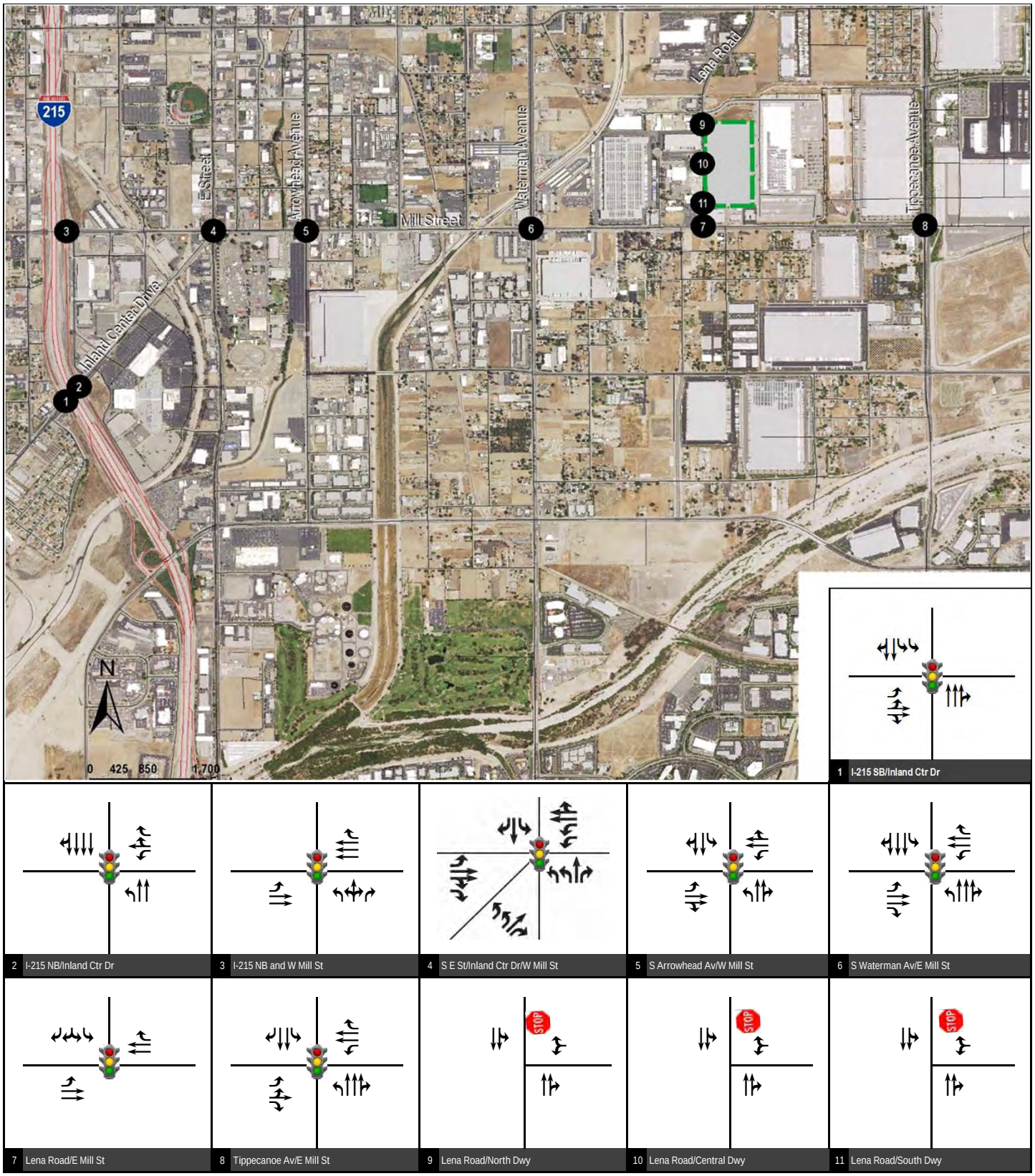


FIGURE 9

Legend

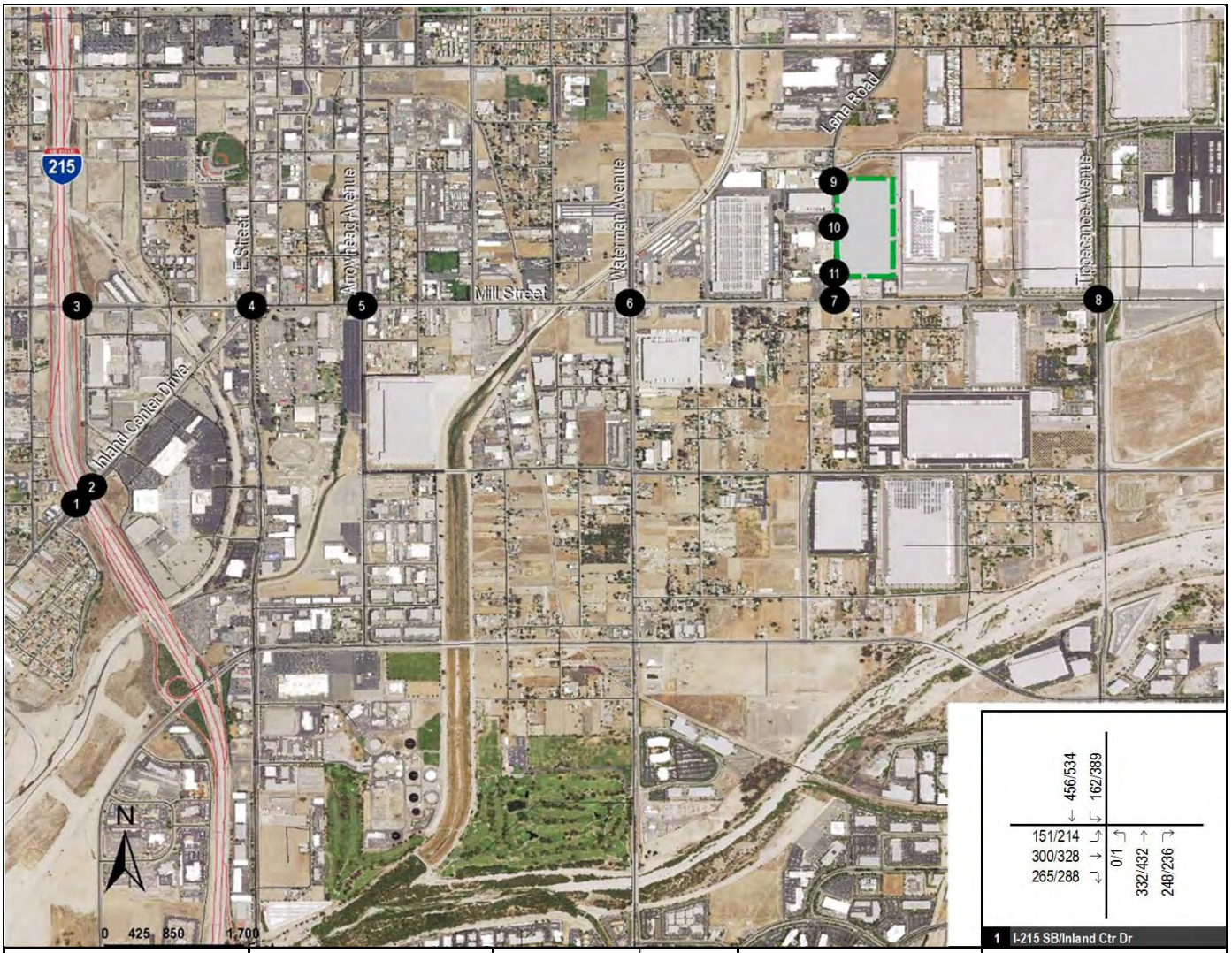
Signal

Stop Sign

Lena Road and Mill Street
Existing Lane Geometrics & Stop Control

translutions
the transportation solutions company...

C:\Dropbox\Tsols\Projects\Hillwood - Lena&Mill\Analysis\Z30 Geo.xlsx 10/31/2016



1 I-215 SB/Inland Ctr Dr

		456/534 ↓
		162/389 ↳
151/214 ↱	0/1 ↰	
300/328 →	332/432 ↑	
265/288 ↴	248/236 ↱	

2 I-215 NB/Inland Ctr Dr

		22/191 ↳
		279/646 ↓
		↱ 454/336
		← 264/290
		↰ 358/271
	179/214 ↰	
	322/432 ↑	

3 I-215 NB and W Mill St

		↱ 160/455
		← 328/571
441/528 ↱		
754/710 →		
	192/239 ↰	
	2/5 ↑	
	80/75 ↱	

4 S E St/Inland Ctr Dr/W Mill St

		27/51 ↳
		33/57 ↖
		131/207 ↓
		37/27 ↰
		↱ 13/15
		← 401577
		↙ 206/302
		↰ 59/104
59/63 ↱		
532/444 →		
58/67 ↴		
0/2 ⇄		
	104/116 ↰	
	412 ↑	
	274/288 ↱	
	44/89 ⇄	
		11/44 ⇄
		49/210 ↑
		112/255 ↱
		66/115 ↱

5 S Arrowhead Av/W Mill St

		39/66 ↳
		170/266 ↓
		38/36 ↳
		↱ 27/39
		← 509/782
		↰ 64/74
59/63 ↱		
723/689 →		
171/111 ↴		
	67/143 ↰	
	152/267 ↑	
	50/71 ↱	

6 S Waterman Av/E Mill St

		110/104 ↳
		566/702 ↓
		104/116 ↳
		↱ 77/102
		← 339/521
		↰ 142/165
104/156 ↱		
485/441 →		
166/185 ↴		
	141/165 ↰	
	495/666 ↑	
	111/102 ↱	

7 Lena Road/E Mill St

		127/158 ↳
		54/95 ↳
		↱ 81/34
		← 332/427
164/114 ↱		
432/495 →		

8 Tippecanoe Av/E Mill St

		252/196 ↳
		913/927 ↓
		14/7 ↳
		↱ 2/2
		← 17/24
		↰ 20/25
135/288 ↱		
74/8 →		
184/245 ↴		
	213/120 ↰	
	701/1080 ↑	
	106/16 ↱	

9 Lena Road/North Dwy

Project Driveway - Only Exists under Project Conditions

10 Lena Road/Central Dwy

Project Driveway - Only Exists under Project Conditions

11 Lena Road/South Dwy

Project Driveway - Only Exists under Project Conditions

FIGURE 10

XX/YY AM/PM Trips

Lena Road and Mill Street
Existing Traffic Volumes

translutions
the tranportation solutions company...

C:\Dropbox\Tsols\Projects\Hillwood - Lena&Mill\Analysis\Z30 Existing NP.xlsx (10/31/2016)

Table D: Existing Levels of Service

Intersection	LOS Std.	Control	Without Project						With Project						V/C Change		Direct Project Impact
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour					
			Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	AM	PM	
1 . I-215 SB/Inland Ctr Dr	D	Signal	27.8	0.39	C	30.2	0.5	C	28	0.4	C	30.6	0.51	C	0.01	0.01	No
2 . I-215 NB/Inland Ctr Dr	D	Signal	24.8	0.5	C	29.4	0.49	C	24.9	0.51	C	29.4	0.5	C	0.01	0.01	No
3 . I-215 NB and W Mill St	D	Signal	31.4	0.45	C	46.8	0.58	D	31.4	0.45	C	54.2	0.58	D	0.00	0.00	No
4 . S E St/Inland Ctr Dr/W Mill St	D	Signal	45.2	0.65	D	41.8	0.76	D	45.9	0.67	D	42.2	0.77	D	0.02	0.01	No
5 . S Arrowhead Av/W Mill St	D	Signal	27.4	0.41	C	27.5	0.49	C	27.2	0.42	C	27.5	0.49	C	0.01	0.00	No
6 . S Waterman Av/E Mill St	D	Signal	37.2	*0.56*	D	38.4	*0.58*	D	35.9	0.57	D	39	0.6	D	0.01	0.02	No
7 . Lena Road/E Mill St	D	Signal	31.9	0.35	C	30.3	0.27	C	30.9	0.36	C	29.2	0.29	C	0.01	0.02	No
8 . Tippecanoe Av/E Mill St	D	Signal	21.5	0.57	C	20.5	0.55	C	26.2	0.58	C	22.6	0.55	C	0.01	0.00	No
9 . Lena Road/North Dwy	D	TWSC	*Future Project Driveway*						10.6		B	10.2		B	0.00	0.00	No
10 . Lena Road/Central Dwy	D	TWSC	*Future Project Driveway*						10.7		B	10.3		B	0.00	0.00	No
11 . Lena Road/South Dwy	D	TWSC	*Future Project Driveway*						10.9		B	10.5		B	0.00	0.00	No

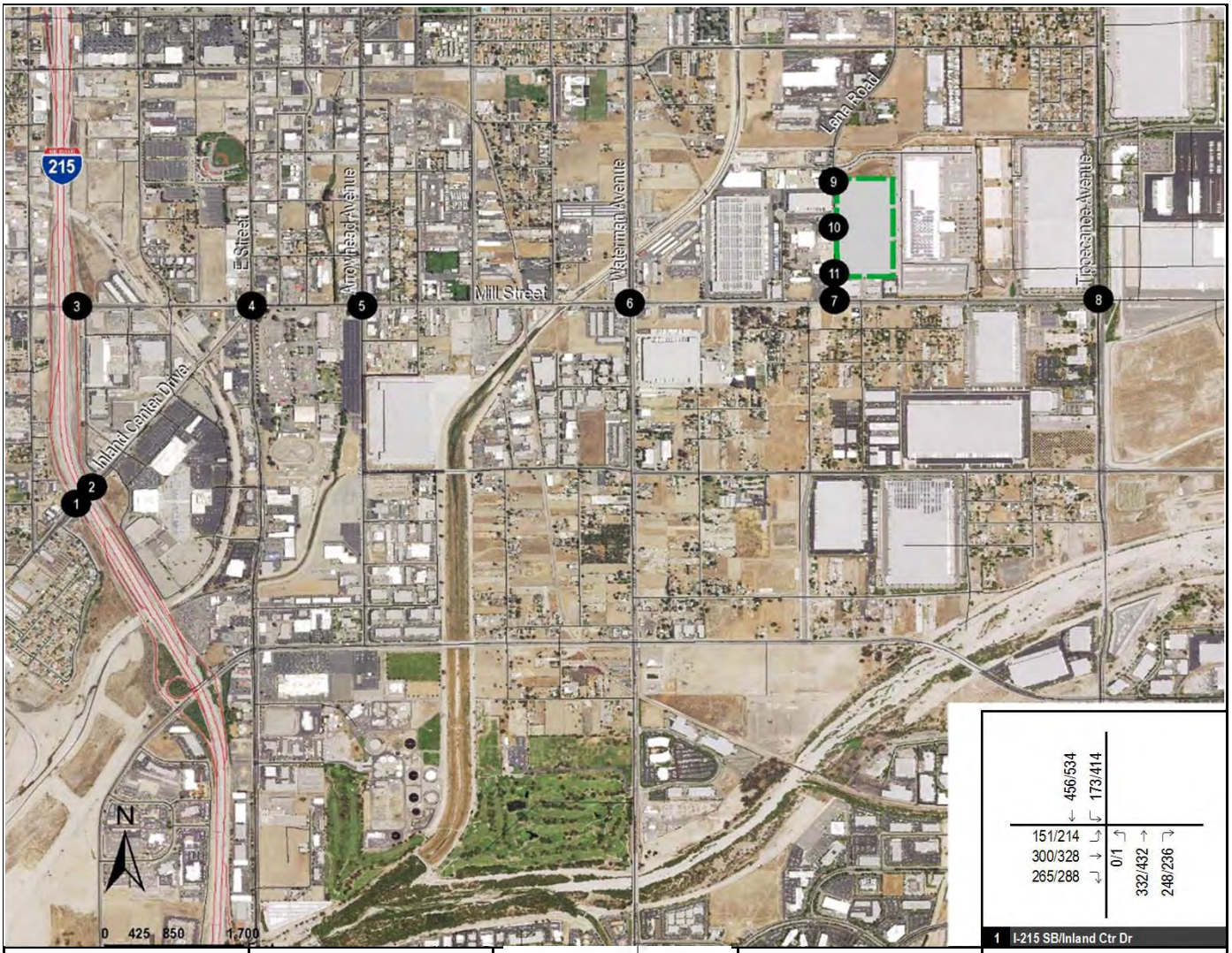
Notes:

* Exceeds LOS Standard

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case approach/movement.

LOS = Level of Service

Caltrans uses a delay of 45 seconds as the threshold for signalized ramp intersections.



1 I-215 SB/Inland Ctr Dr

		456/534 ↓
		173/414 ↳
151/214 ↳	0/1 ↰	
300/328 →	332/432 ↑	
265/288 ↲	248/236 ↱	

2 I-215 NB/Inland Ctr Dr

22/191 ↲	290/671 ↓	↱ 476/347
		← 264/290
		↳ 358/271
	179/214 ↰	
	322/432 ↑	

3 I-215 NB and W Mill St

		↱ 168/473
		← 328/571
441/528 ↳	192/239 ↰	
771/718 →	2/5 ↑	
	80/75 ↱	

4 S E St/Inland Ctr Dr/W Mill St

		↱ 13/15
		↑ 409/595
		↖ 228/313
		↳ 59/104
27/51 ↲	11/44 ↰	
33/57 ↖	49/210 ↑	
13/207 ↓	112/265 ↑	
37/27 ↳	66/115 ↱	
59/63 ↳		
549/452 →		
58/67 ↳		
0/2 ↲		
104/115 ↑		
4/12 ↖		
296/239 ↑		
44/89 ↗		

5 S Arrowhead Av/W Mill St

39/66 ↲	38/36 ↳	↱ 27/39
170/266 ↓		← 527/825
		↳ 64/74
59/63 ↳	67/143 ↰	
762/707 →	152/267 ↑	
171/111 ↲	50/71 ↱	

6 S Waterman Av/E Mill St

110/104 ↲	106/117 ↳	↱ 78/104
566/702 ↓		← 357/564
		↳ 144/169
104/156 ↳	141/165 ↰	
524/459 →	495/666 ↑	
166/185 ↲	114/104 ↱	

7 Lena Road/E Mill St

148/207 ↲	60/110 ↳	↱ 95/40
		← 332/427
208/135 ↳		
432/495 →		

8 Tippecanoe Av/E Mill St

253/197 ↲	14/7 ↳	↱ 2/2
913/927 ↓		← 17/24
		↳ 20/25
136/289 ↳	226/126 ↰	
74/8 →	701/1080 ↑	
190/259 ↲	106/16 ↱	

9 Lena Road/North Dwy

181/253 ↓	1/0 ↳	↱ 0/1
		↳ 10/22
	245/148 →	
	20/10 ↱	

10 Lena Road/Central Dwy

191/275 ↓		↳ 5/11
	265/158 →	
	10/5 ↱	

11 Lena Road/South Dwy

195/286 ↓		↳ 14/32
	275/163 →	
	29/14 ↱	

FIGURE 11

XX/YY AM/PM Trips

Lena Road and Mill Street
Existing Plus Project Traffic Volumes

translutions
the tranportation solutions company...

6.0 OPENING YEAR CONDITIONS

This section discusses opening year transportation conditions in the study area. It is anticipated that the project will open in 2016.

6.1 Opening Year Roadway Conditions

Opening year roadway conditions are assumed to be the same as those under existing conditions.

6.2 Opening Year Transit Service

Transit service under opening year conditions are anticipated to remain the same as under existing conditions.

6.3 Opening Year Pedestrian & Bicycle Facilities

Pedestrian and bicycle facilities under opening year conditions are anticipated to remain the same as under existing conditions.

6.4 Opening Year Intersections Levels of Service

An intersection level of service analysis was conducted for opening year conditions to determine circulation system performance. Opening year without project traffic volumes at study intersections are shown in Figure 12. Detailed volume development worksheets are included in Appendix B. Opening year levels of service for the study area intersections are summarized in Table E. Level of service calculation worksheets are contained in Appendix C. As shown in Table E, all study area intersections are forecast to operate at satisfactory levels of service, except for the intersection of I-215 Northbound Ramps/Mill Street, which operates at LOS E during the p.m. peak hour.

6.5 Opening Year With Project Intersections Levels of Service

An intersection level of service analysis was conducted for opening year with project conditions to determine circulation system performance. Opening year with project traffic volumes at study intersections are shown in Figure 13. The existing plus project levels of service for the study area intersections are summarized in Table E. Level of service calculation worksheets are contained in Appendix C. As shown in Table E, all study area intersections are forecast to operate at satisfactory levels of service, except for the intersection of I-215 Northbound Ramps/Mill Street, which operates at LOS E during the p.m. peak hour. The project related increase in v/c ratio at this intersection is less than the threshold, and the project does not create a significant impact.

7.0 CUMULATIVE CONDITIONS

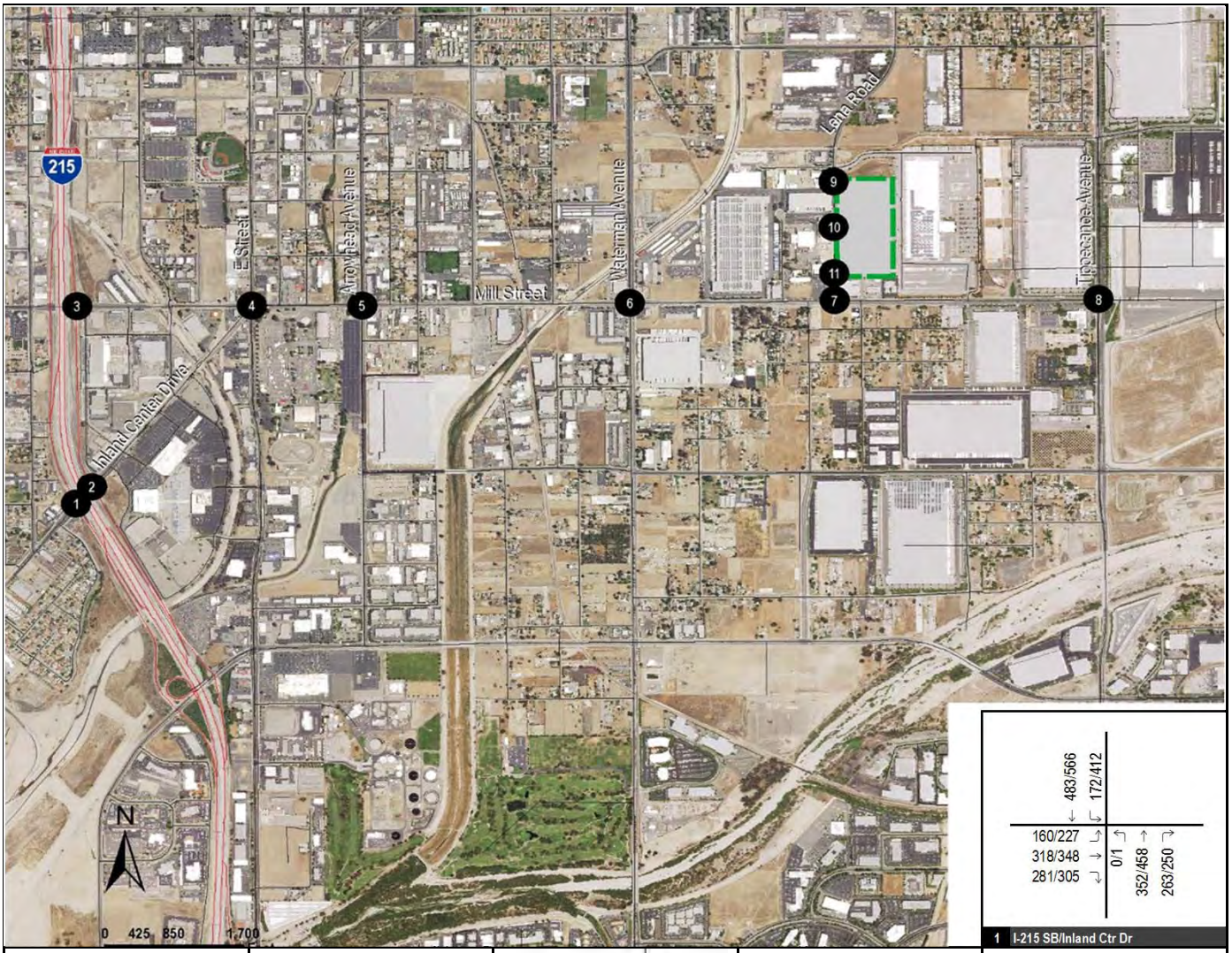
This section discusses year cumulative transportation conditions (Project Opening Year Base plus Other Proposed Projects Traffic Condition) in the study area.

7.1 Cumulative Roadway Conditions

Roadway conditions under the cumulative scenario are anticipated to remain the same as those under existing and opening year conditions.

7.2 Cumulative Transit Service

Transit service for this scenario are anticipated to remain the same as those under existing conditions.



1 I-215 SB/Inland Ctr Dr

		483/566 ↓
		172/412 ↳
160/227 ↱	0/1 ↰	
318/348 →	352/458 ↑	
281/305 ↴	263/250 ↱	

2 I-215 NB/Inland Ctr Dr

23/202 ↲	296/685 ↓	↱ 481/356
		← 280/307
		↳ 379/287
	190/227 ↰	
	341/458 ↑	

3 I-215 NB and W Mill St

		↱ 170/482
		← 348/605
467/560 ↱	204/253 ↰	
799/753 →	2/5 ↑	
	85/80 ↱	

4 S E St/Inland Ctr Dr/W Mill St

29/54 ↖	35/60 ←	14/10 ↱
139/219 ↓	39/29 ↳	425/812 ←
		218/320 ↖
		63/110 ↴
63/67 ↱	12/47 ↰	
564/471 →	52/223 ↑	
61/71 ↴	119/270 ↑	
0/2 ↴	70/122 ↱	
4/13 ↰		
110/123 ↑		
290/305 ↑		
47/94 ↱		

5 S Arrowhead Av/W Mill St

41/70 ↲	180/282 ↓	40/38 ↳
		↱ 29/41
		← 540/829
		↰ 68/78
63/67 ↱	71/152 ↰	
766/730 →	161/283 ↑	
181/118 ↴	53/75 ↱	

6 S Waterman Av/E Mill St

117/110 ↲	600/744 ↓	110/123 ↳
		↱ 82/108
		← 359/552
		↰ 151/175
110/165 ↱	149/175 ↰	
514/467 →	525/706 ↑	
176/196 ↴	118/108 ↱	

7 Lena Road/E Mill St

135/167 ↲	57/101 ↳	
		↱ 86/36
		← 591/835
174/121 ↱		
742/699 →		

8 Tippecanoe Av/E Mill St

267/208 ↲	968/983 ↓	15/7 ↳
		↱ 2/2
		← 18/25
		↰ 21/27
143/305 ↱	226/127 ↰	
78/8 →	743/1145 ↑	
195/260 ↴	112/17 ↱	

9 Lena Road/North Dwy

Project Driveway - Only Exists under Project Conditions

10 Lena Road/Central Dwy

Project Driveway - Only Exists under Project Conditions

11 Lena Road/South Dwy

Project Driveway - Only Exists under Project Conditions

FIGURE 12

XX/YY AM/PM Trips

Lena Road and Mill Street
Opening Year Without Project Traffic Volumes

translutions
the tranportation solutions company...

C:\Dropbox\Tsols\Projects\Hillwood - Lena&Mill\Analysis\Z30 OY NP.xlsx (10/31/2016)

Table E: Opening Year Levels of Service

Intersection	LOS Std.	Control	Opening Year Base							Opening Year Base Plus Project							V/C Change		Direct Project Impact
			AM Peak Hour			PM Peak Hour				AM Peak Hour			PM Peak Hour						
			Delay	V/C	LOS	Delay	V/C	LOS		Delay	V/C	LOS	Delay	V/C	LOS		AM	PM	
1 . I-215 SB/Inland Ctr Dr	D	Signal	27.9	0.42	C	30.5	0.53	C		28	0.42	C	30.8	0.54	C		0.00	0.01	No
2 . I-215 NB/Inland Ctr Dr	D	Signal	25.5	0.53	C	29.6	0.52	C		25.6	0.54	C	29.6	0.53	C		0.01	0.01	No
3 . I-215 NB and W Mill St	D	Signal	31.4	0.48	C	55.3	0.62	E	*	31.5	0.48	C	59.4	0.62	E	*	0.00	0.00	No
4 . S E St/Inland Ctr Dr/W Mill St	D	Signal	46.9	0.69	D	44	0.81	D		47.4	0.71	D	44.8	0.82	D		0.02	0.01	No
5 . S Arrowhead Av/W Mill St	D	Signal	23.1	0.44	C	27.6	0.54	C		22.7	0.45	C	27.7	0.54	C		0.01	0.00	No
6 . S Waterman Av/E Mill St	D	Signal	*33.8*	*0.6*	*C*	37.3	*0.62*	*D*		34.1	0.6	C	36.7	0.63	D		0.00	0.01	No
7 . Lena Road/E Mill St	D	Signal	26	0.35	C	23.4	0.41	C		25.6	0.38	C	23.2	0.43	C		0.03	0.02	No
8 . Tippecanoe Av/E Mill St	D	Signal	26.6	0.6	C	22.9	0.58	C		28.4	0.62	C	23.4	0.58	C		0.02	0.00	No
9 . Lena Road/North Dwy	D	TWSC	*Future Project Driveway*									A	10.3		B		0.00	0.00	No
10 . Lena Road/Central Dwy	D	TWSC	*Future Project Driveway*									A	10.4		B		0.00	0.00	No
11 . Lena Road/South Dwy	D	TWSC	*Future Project Driveway*									A	10.6		B		0.00	0.00	No

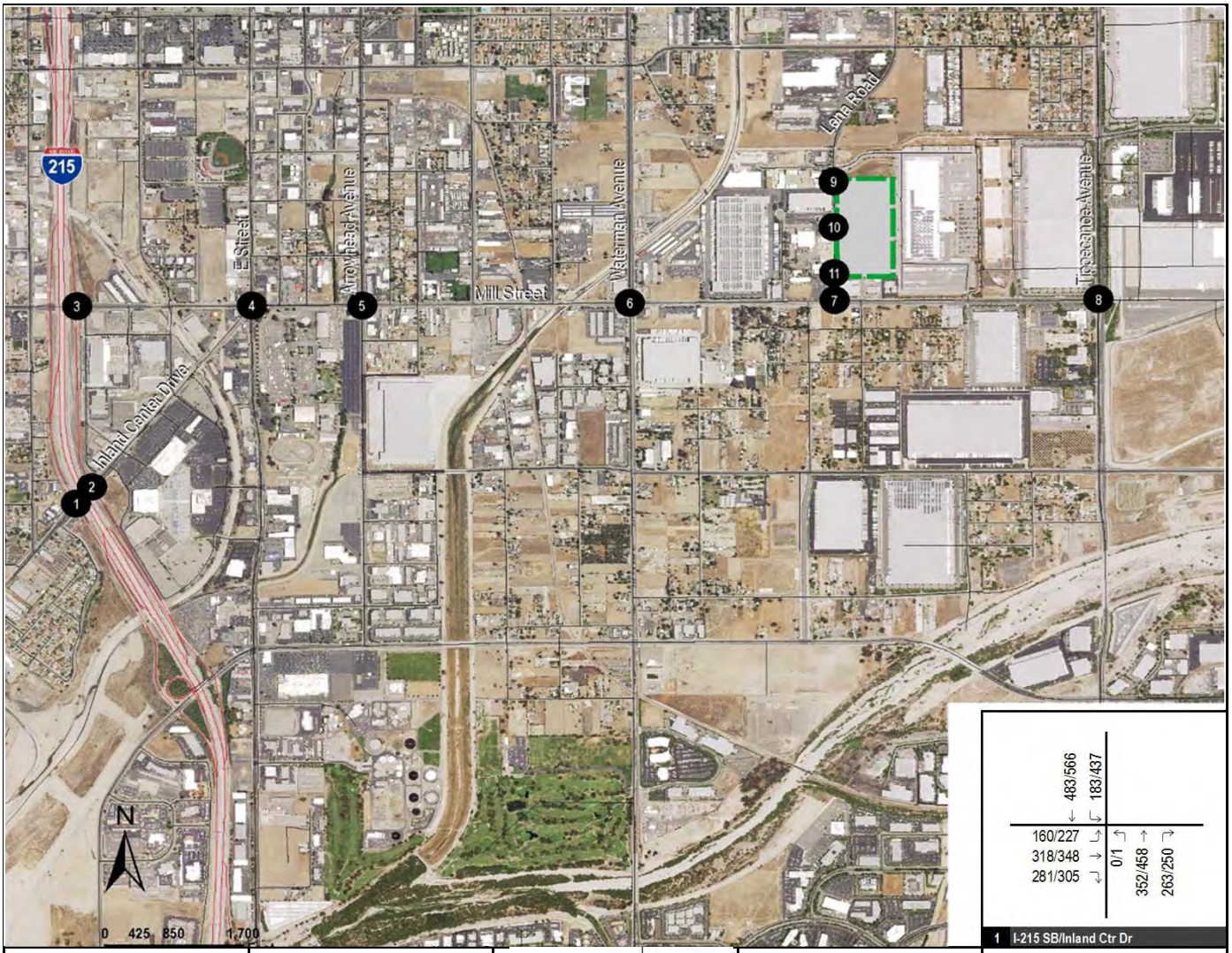
Notes:

* Exceeds LOS Standard

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case approach/movement.

LOS = Level of Service

Caltrans uses a delay of 45 seconds as the threshold for signalized ramp intersections.



1 I-215 SB/Inland Ctr Dr

	483/566 ↓	183/437 ↳
160/227 ↳		0/1 ↱
318/348 →		352/458 →
281/305 ↳		263/250 ↱

2 I-215 NB/Inland Ctr Dr

23/202 ↳	307/710 ↓	↰ 503/367
		← 280/307
		↲ 379/287
	190/227 ↰	
	341/458 →	

3 I-215 NB and W Mill St

		↰ 178/500
		← 348/605
467/560 ↳		
816/761 →		
	204/253 ↰	2/5 ↑ 85/80 ↱

4 S E St/Inland Ctr Dr/W Mill St

29/54 ↲	35/60 ↙	139/219 ↓ 39/29 ↳
		↰ 14/16
		← 433/630
		↙ 240/331
		↓ 63/110
63/67 ↱		
581/479 →		
61/71 ↳		
0/2 ↳		
4/13 ↰	110/123 ↰	312/316 ↰ 47/94 ↰
		12/47 ↰ 52/223 ↑ 119/270 ↱ 70/122 ↱

5 S Arrowhead Av/W Mill St

41/70 ↳	180/282 ↓	40/38 ↳
		↱ 29/41
		← 558/872
		↲ 68/78
63/67 ↱		
805/748 →		
181/118 ↳		
	71/152 ↰	161/283 → 53/75 ↱

6 S Waterman Av/E Mill St

117/110 ↳	600/744 ↓	112/124 ↳
		↱ 83/110
		← 377/595
		↲ 153/179
110/165 ↱		
553/485 →		
176/196 ↳		
	149/175 ↰	525/706 → 121/110 ↱

7 Lena Road/E Mill St

156/216 ↳	63/116 ↳	
		↱ 100/42
		← 591/835
218/142 ↱		
742/699 →		

8 Tippecanoe Av/E Mill St

268/209 ↳	968/983 ↓	15/7 ↳
		↱ 2/2
		← 18/25
		↲ 21/27
144/306 ↱		
78/8 →		
201/274 ↳		
	239/133 ↰	743/1145 → 112/17 ↱

9 Lena Road/North Dwy

192/268 ↓	1/0 ↳	
		↱ 0/1
		↲ 10/22
	260/157 →	20/10 ↱

10 Lena Road/Central Dwy

202/290 ↓		
		↲ 5/11
	280/167 →	10/5 ↱

11 Lena Road/South Dwy

206/301 ↓		
		↲ 14/32
	290/172 →	29/14 ↱

FIGURE 13

XX/YY AM/PM Trips

Lena Road and Mill Street
Opening Year With Project Traffic Volumes

translutions
the tranportation solutions company...

7.3 Cumulative Pedestrian & Bicycle Facilities

Pedestrian and bike facilities for this scenario are anticipated to remain the same as those under existing conditions.

7.4 Cumulative Intersections Levels of Service

An intersection level of service analysis was conducted for cumulative conditions (Project Opening Year Base plus Other Proposed Projects Traffic Condition) to determine circulation system performance. Cumulative without project traffic volumes at study intersections are shown in Figure 14. Detailed volume development worksheets are included in Appendix B. Year 2035 levels of service for the study area intersections are summarized in Table F. Level of service calculation worksheets are contained in Appendix C. As shown in Table F, all study area intersections are forecast to operate at satisfactory levels of service, except for the intersection of I-215 Northbound Ramps/Mill Street, which operates at LOS E during the p.m. peak hour.

7.5 Cumulative With Project Intersections Levels of Service

An intersection level of service analysis was conducted for opening year with project conditions to determine circulation system performance. Year 2035 with project traffic volumes at study intersections are shown in Figure 15. Cumulative with Project levels of service for the study area intersections are summarized in Table F. Level of service calculation worksheets are contained in Appendix C. As shown in Table F, all study area intersections are forecast to operate at satisfactory levels of service, except for the intersection of I-215 Northbound Ramps/Mill Street, which operates at LOS E during the p.m. peak hour. The project related increase in v/c ratio at this intersection is less than the threshold, and the project does not create a significant impact.

8.0 YEAR 2040 CONDITIONS

This section discusses year cumulative transportation conditions (Project Opening Year Base plus Other Proposed Projects Traffic Condition) in the study area.

8.1 Year 2040 Roadway Conditions

Roadway conditions under the cumulative scenario are anticipated to remain the same as those under existing and opening year conditions.

8.2 Year 2040 Transit Service

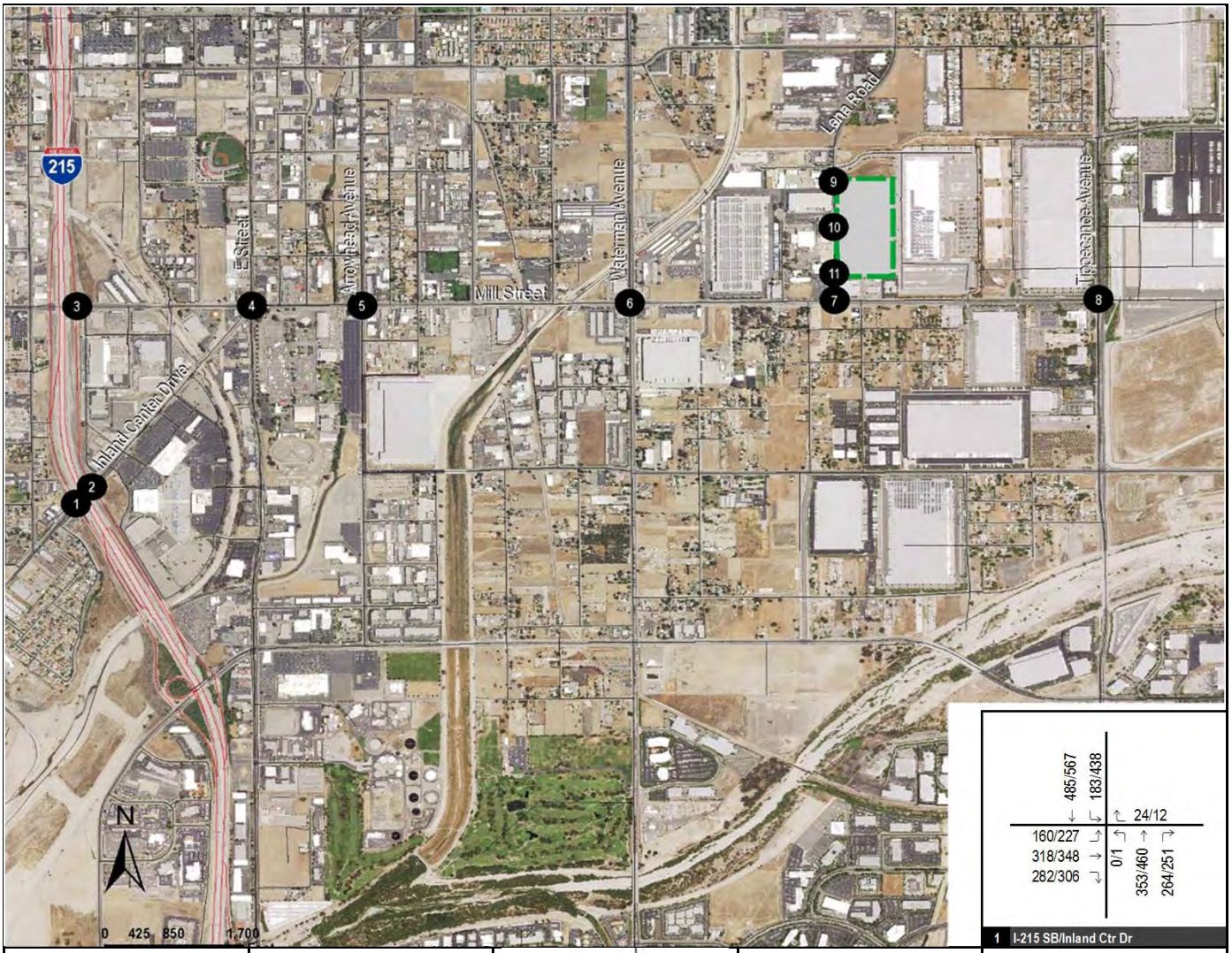
Transit service for this scenario are anticipated to remain the same as those under existing conditions.

8.3 Year 2040 Pedestrian & Bicycle Facilities

Pedestrian and bike facilities for this scenario are anticipated to remain the same as those under existing conditions.

8.4 Year 2040 Intersections Levels of Service

An intersection level of service analysis was conducted for Year 2040 conditions to determine circulation system performance. Year 2040 without project traffic volumes at study intersections are shown in Figure 16. Detailed volume development worksheets are included in Appendix B. Year 2035 levels of service for the study area intersections are summarized in Table G. Level of service calculation worksheets are contained in Appendix C. As shown in Table G, all study area intersections are forecast to operate at satisfactory levels of service, except for the intersection of I-215 Northbound Ramps/Mill Street, which operates at LOS F during the p.m. peak hour.



1 I-215 SB/Inland Ctr Dr

	485/567 ↓	183/438 ↳
160/227 ↳		↰ 24/12
318/348 →		0/1 ↰
282/306 ↴		353/460 ↑
		264/251 ↱

2 I-215 NB/Inland Ctr Dr

	23/202 ↳	307/711 ↓
		↰ 481/356
		← 280/307
		↙ 379/287
	192/229 ↰	
	365/470 ↑	

3 I-215 NB and W Mill St

		↰ 197/518
		← 386/623
467/560 ↳		
873/798 →		
	204/253 ↰	
	2/5 ↑	
	85/80 ↱	

4 S E St/Inland Ctr Dr/W Mill St

	61/67 ↳	35/60 ↖
	171/232 ↓	39/29 ↳
		↰ 14/16
		← 457/652
		↖ 229/346
		↙ 63/110
103/79 ↱		
598/504 →		
61/71 ↴		
0/2 ⇄		
	4/13 ↰	
	110/123 ↑	
	314/317 ↱	
	47/94 ⇉	
	12/47 ↰	
	52/223 ↑	
	159/282 ↱	
	70/122	

5 S Arrowhead Av/W Mill St

	41/70 ↳	180/282 ↓
		↰ 29/41
		← 583/895
		↙ 68/78
63/67 ↳		
824/774 →		
181/118 ↴		
	71/152 ↰	
	161/283 ↑	
	53/75 ↱	

6 S Waterman Av/E Mill St

	136/126 ↳	616/758 ↓
		↰ 92/122
		← 376/594
		↙ 151/175
124/184 ↳		
552/485 →		
182/203 ↴		
	156/183 ↰	
	537/723 ↑	
	118/108 ↱	

7 Lena Road/E Mill St

	135/167 ↳	57/101 ↳
		↰ 86/36
		← 618/891
174/121 ↳		
794/729 →		

8 Tippecanoe Av/E Mill St

	267/208 ↳	1008/1011 ↓
		↰ 2/2
		← 18/25
		↙ 21/27
143/305 ↳		
78/8 →		
213/282 ↴		
	246/146 ↰	
	772/1181 ↑	
	112/17 ↱	

9 Lena Road/North Dwy

Project Driveway - Only Exists under Project Conditions

10 Lena Road/Central Dwy

Project Driveway - Only Exists under Project Conditions

11 Lena Road/South Dwy

Project Driveway - Only Exists under Project Conditions

FIGURE 14

XX/YY AM/PM Trips

Lena Road and Mill Street

Opening Year Cumulative Without Project Traffic Volumes

translutions
the tranportation solutions company...

Table F: Opening Year Cumulative Levels of Service

Intersection	LOS Std.	Control	Opening Year Base Plus Cumulative Projects						ng Year Base Plus Cumulative Projects Plus P						V/C Change		Direct Project Impact
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour					
			Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	AM	PM	
1 . I-215 SB/Inland Ctr Dr	D	Signal	28.1	0.42	C	30.9	0.54	C	28.2	0.43	C	31.2	0.55	C	0.01	0.01	No
2 . I-215 NB/Inland Ctr Dr	D	Signal	25.8	0.53	C	29.7	0.52	C	25.9	0.55	C	29.7	0.53	C	0.02	0.01	No
3 . I-215 NB and W Mill St	D	Signal	31.4	0.49	C	63.1	0.63	E *	31.4	0.49	C	60.5	0.64	E *	0.00	0.01	No
4 . S E St/Inland Ctr Dr/W Mill St	D	Signal	50.1	0.77	D	47.2	0.85	D	53.8	0.79	D	49.2	0.87	D	0.02	0.02	No
5 . S Arrowhead Av/W Mill St	D	Signal	11.8	0.46	B	27.8	0.55	C	11.2	0.46	B	27.6	0.56	C	0.00	0.01	No
6 . S Waterman Av/E Mill St	D	Signal	34.8	0.61	C	37.5	0.65	D	35.1	0.62	D	37.9	0.65	D	0.01	0.00	No
7 . Lena Road/E Mill St	D	Signal	25.3	0.36	C	22.5	0.42	C	24.9	0.39	C	22.5	0.45	C	0.03	0.03	No
8 . Tippecanoe Av/E Mill St	D	Signal	29.6	0.63	C	24.1	0.6	C	31.7	0.64	C	24.7	0.61	C	0.01	0.01	No
9 . Lena Road/North Dwy	D	TWSC	*Future Project Driveway*						10.8		B	10.3		B	0.00	0.00	No
10 . Lena Road/Central Dwy	D	TWSC	*Future Project Driveway*						10.8		B	10.4		B	0.00	0.00	No
11 . Lena Road/South Dwy	D	TWSC	*Future Project Driveway*						11.1		B	10.6		B	0.00	0.00	No

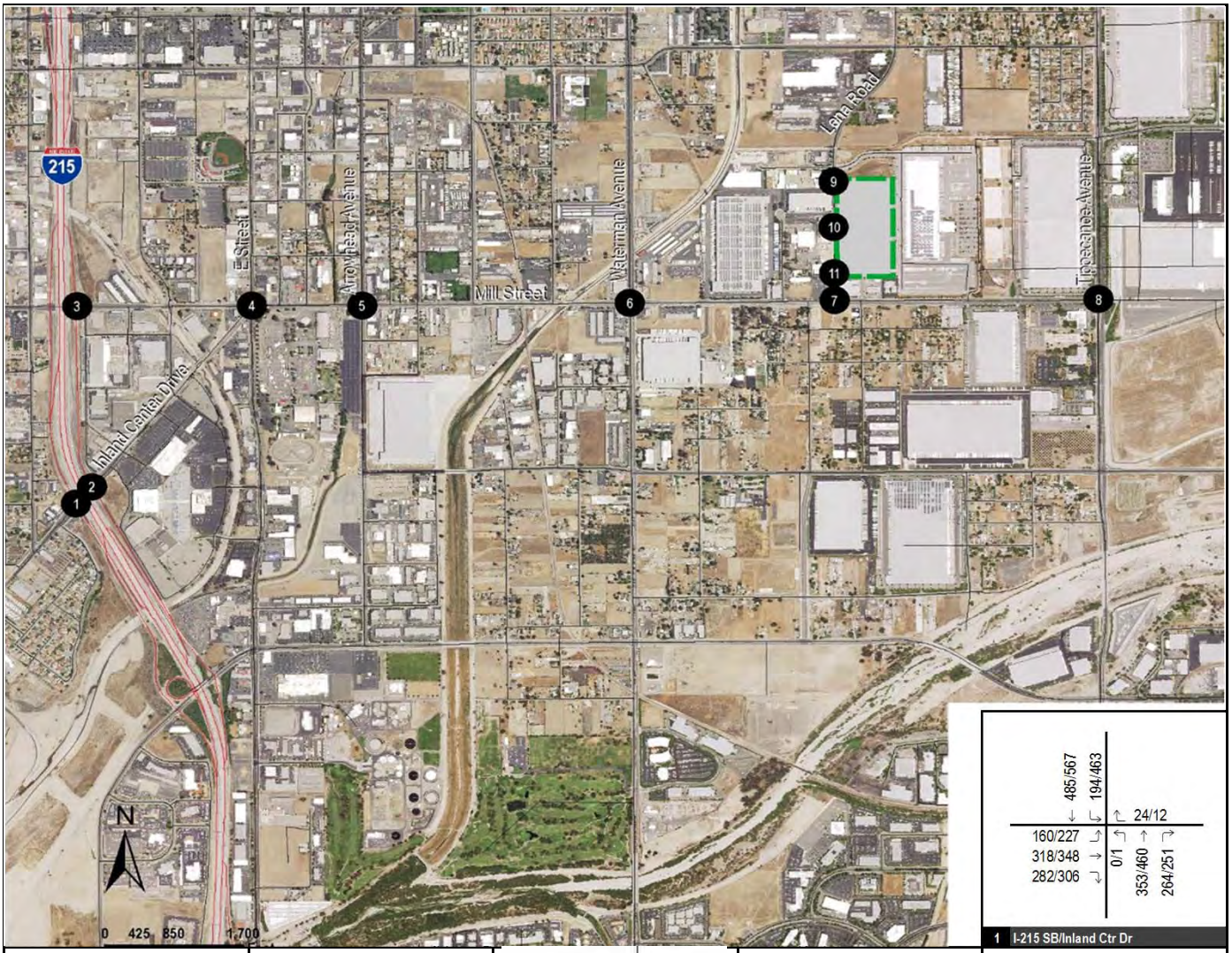
Notes:

* Exceeds LOS Standard

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case approach/movement.

LOS = Level of Service

Caltrans uses a delay of 45 seconds as the threshold for signalized ramp intersections.



1 I-215 SB/Inland Ctr Dr

	485/567 ↓	194/463 ↳
160/227 ↳		↱ 24/12
318/348 →		0/1 ↰
282/306 ↴		353/460 →
		264/251 ↱

2 I-215 NB/Inland Ctr Dr

	23/202 ↳	318/736 ↓
		↰ 503/367
		← 280/307
		↙ 379/287
	192/229 ↰	
	365/470 →	

3 I-215 NB and W Mill St

		↱ 205/536
		← 386/623
467/560 ↳		
890/806 →		
	204/253 ↰	2/5 →
		85/80 ↱

4 S E St/Inland Ctr Dr/W Mill St

	61/67 ↳	35/60 ↖
	171/232 ↓	39/29 ↘
103/79 ↱		↱ 14/16
615/512 →		← 465/670
61/71 ↴		↖ 251/357
0/2 ↲		↙ 63/110
	4/13 ↲	12/47 ↲
	110/123 ↑	52/223 ↰
	336/328 ↱	159/282 ↑
	47/94 ↱	70/122 ↱

5 S Arrowhead Av/W Mill St

	41/70 ↳	180/282 ↓
		↱ 29/41
		← 601/938
63/67 ↳		↙ 68/78
863/792 →		
181/118 ↴		
	71/152 ↰	40/38 ↳
	161/283 →	
	53/75 ↱	

6 S Waterman Av/E Mill St

	136/126 ↳	616/758 ↓
		↱ 93/124
		← 394/637
		↙ 153/179
124/184 ↳		
591/503 →		
182/203 ↴		
	156/183 ↰	126/136 ↳
	537/723 →	
	121/110 ↱	

7 Lena Road/E Mill St

	156/216 ↳	63/116 ↳
		↱ 100/42
		← 618/891
218/142 ↳		
794/729 →		

8 Tippecanoe Av/E Mill St

	268/209 ↳	1008/1011 ↓
		↱ 2/2
		← 18/25
		↙ 21/27
144/306 ↳		
78/8 →		
219/296 ↴		
	259/152 ↰	772/1181 →
		112/17 ↱

9 Lena Road/North Dwy

	192/268 ↓	1/0 ↳
		↱ 0/1
		↙ 10/22
	260/157 →	
	20/10 ↱	

10 Lena Road/Central Dwy

	202/290 ↓	
		↙ 5/11
	280/167 →	
	10/5 ↱	

11 Lena Road/South Dwy

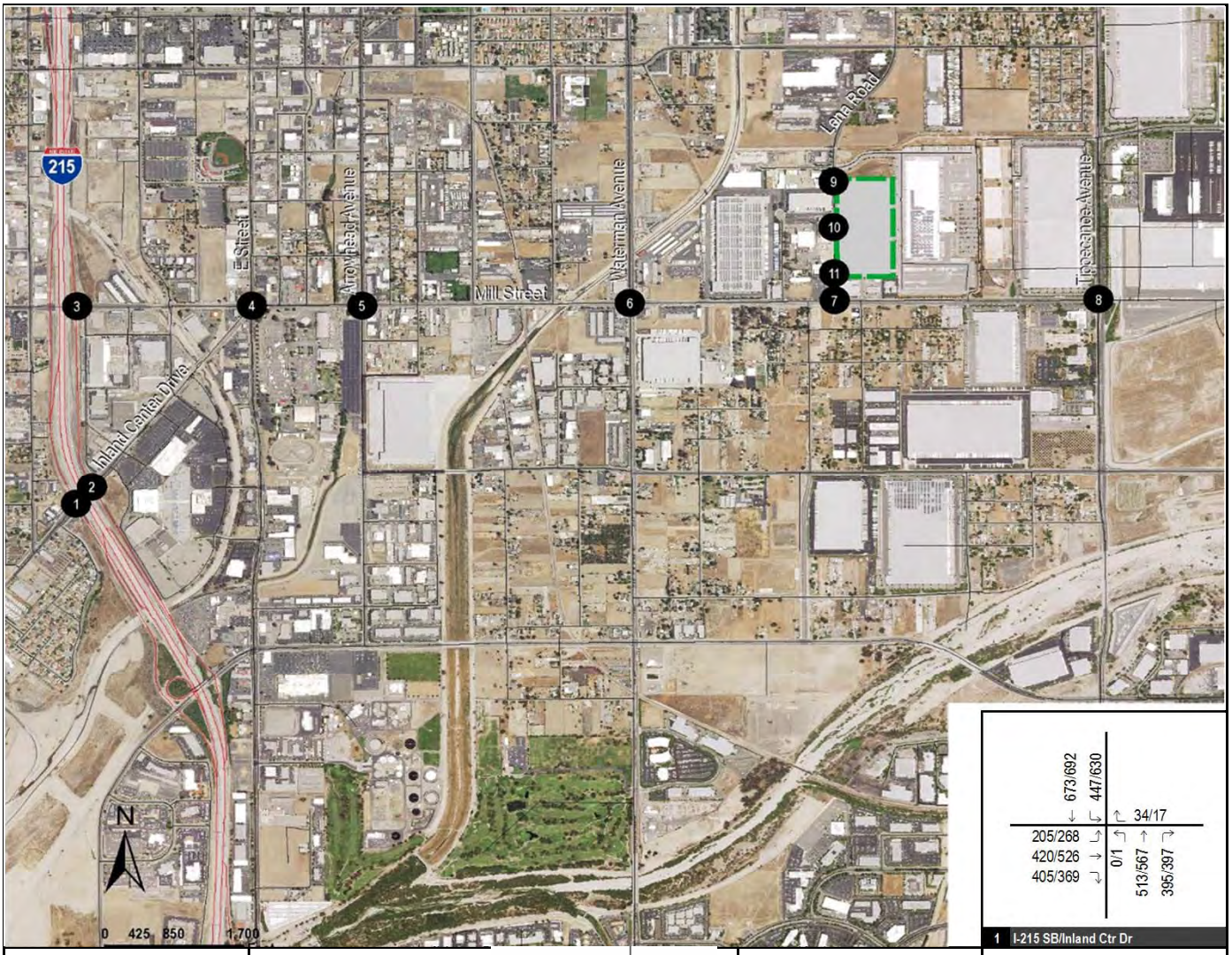
	206/301 ↓	
		↙ 14/32
	290/172 →	
	29/14 ↱	

FIGURE 15

XX/YY AM/PM Trips

Lena Road and Mill Street
Opening Year Cumulative With Project Traffic Volumes

translutions
the tranportation solutions company...



1 I-215 SB/Inland Ctr Dr

	673/692 ↓	447/630 ↳
205/268 ↳		↰ 34/17
420/526 →		0/1 ↰ ↑ ↱
405/369 ↳		513/567 395/397

2 I-215 NB/Inland Ctr Dr

	91/352 ↳	632/883 ↓
		↰ 955/652
		← 670/616
		↳ 499/428
	297/294 ↰	442/541 ↑

3 I-215 NB and W Mill St

		↰ 283/865
		← 452/834
671/805 ↳		
1413/969 →	293/264 ↰	3/7 ↑ ↱ 114/186

4 S E St/Inland Ctr Dr/W Mill St

	50/86 ↳	88/96 ↙
	246/333 ↓	56/42 ↳
		↰ 20/23
		← 657/937
		↙ 329/497
		↳ 91/158
148/114 ↱		
859/724 →		
88/102 ↳		
0/3 ⇄		
	6/19 ↰	158/177 ↑
	451/456 ←	68/135 ⇉
	17/47 ↰	75/320 ↑
	229/405 ↑	101/175 ↱

5 S Arrowhead Av/W Mill St

	55/102 ↳	234/405 ↓
		↰ 41/49
		← 912/1267
		↳ 114/112
92/95 ↳		
1479/1232 →	102/265 ↰	231/382 ↑ ↱ 76/122
314/131 ↳		

6 S Waterman Av/E Mill St

	243/137 ↳	763/1089 ↓
		↰ 106/249
		← 659/938
		↳ 169/222
159/302 ↳		
972/865 →	193/263 ↰	772/873 ↑ ↱ 140/136
221/292 ↳		

7 Lena Road/E Mill St

	194/176 ↳	67/165 ↳
		↰ 117/62
		← 705/1038
214/174 ↳		
1019/1086 →		

8 Tippecanoe Av/E Mill St

	425/409 ↳	1494/1392 ↓
		↰ 2/3
		← 26/30
		↳ 30/39
239/492 ↳		
86/10 →	423/386 ↰	1010/1606 ↑ ↱ 161/18
436/649 ↳		

9 Lena Road/North Dwy

Project Driveway - Only Exists under Project Conditions

10 Lena Road/Central Dwy

Project Driveway - Only Exists under Project Conditions

11 Lena Road/South Dwy

Project Driveway - Only Exists under Project Conditions

FIGURE 16

XX/YY AM/PM Trips

Lena Road and Mill Street
Year 2040 Without Project Traffic Volumes

translutions
the tranportation solutions company...

C:\Dropbox\Tsols\Projects\Hillwood - Lena&Mill\Analysis\Z30 2040 NP.xlsx (10/31/2016)

Table G: Year 2040 Levels of Service

Intersection	LOS Std.	Control	Without Project							With Project							V/C Change		Direct Project Impact
			AM Peak Hour			PM Peak Hour				AM Peak Hour			PM Peak Hour						
			Delay	V/C	LOS	Delay	V/C	LOS		Delay	V/C	LOS	Delay	V/C	LOS		AM	PM	
1 . I-215 SB/Inland Ctr Dr	D	Signal	30.8	0.59	C	34.2	0.72	C		30.9	0.59	C	34.6	0.73	C		0.00	0.01	No
2 . I-215 NB/Inland Ctr Dr	D	Signal	35	0.84	C	38.7	0.81	D		35.7	0.86	D	39.4	0.82	D		0.02	0.01	No
3 . I-215 NB and W Mill St	D	Signal	35.4	0.65	D	>100	1.06	F	*	36.3	0.65	D	>100	1.07	F	*	0.00	0.01	No
4 . S E St/Inland Ctr Dr/W Mill St	D	Signal	41.7	0.69	D	50.6	0.85	D		42.1	0.7	D	50.8	0.86	D		0.01	0.01	No
5 . S Arrowhead Av/W Mill St	D	Signal	40.9	1.32	D	25.5	1.18	C		43.3	1.32	D	25.6	1.21	C		0.00	0.03	No
6 . S Waterman Av/E Mill St	D	Signal	35.2	0.74	D	45.5	0.91	D		35.6	0.76	D	46.8	0.92	D		0.02	0.01	No
7 . Lena Road/E Mill St	D	Signal	24.4	0.36	C	21.8	0.47	C		23.9	0.38	C	21.8	0.49	C		0.02	0.02	No
8 . Tippecanoe Av/E Mill St	D	Signal	37	0.86	D	40	0.88	D		38.6	0.87	D	41.8	0.88	D		0.01	0.00	No
9 . Lena Road/North Dwy	D	TWSC	*Future Project Driveway*							11.4		B	11		B		0.00	0.00	No
10 . Lena Road/Central Dwy	D	TWSC	*Future Project Driveway*							9		A	11		B		0.00	0.00	No
11 . Lena Road/South Dwy	D	TWSC	*Future Project Driveway*							9.1		A	11.4		B		0.00	0.00	No

Notes:

* Exceeds LOS Standard

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case approach/movement.

LOS = Level of Service

Caltrans uses a delay of 45 seconds as the threshold for signalized ramp intersections.

8.5 Year 2040 With Project Intersections Levels of Service

An intersection level of service analysis was conducted for Year 2040 with project conditions to determine circulation system performance. Year 2040 with project traffic volumes at study intersections are shown in Figure 15. Year 2040 with Project levels of service for the study area intersections are also summarized in Table G. Level of service calculation worksheets are contained in Appendix C. As shown in Table G, all study area intersections are forecast to operate at satisfactory levels of service, except for the intersection of I-215 Northbound Ramps/Mill Street, which operates at LOS F during the p.m. peak hour. The project related increase in v/c ratio at this intersection is less than the threshold, and the project does not create a significant impact.

9.0 CIRCULATION IMPROVEMENTS

The intersection of I-215 Northbound Ramps and Mill Street operates at unsatisfactory conditions under all analysis scenarios. The recommended improvement at this intersection if to restripe the third westbound through lane to a shared through-right turn lane for all analysis scenarios. Table H, I, J, and K show the resulting levels of service under existing plus project, opening year base plus project, opening year cumulative plus project, and year 2040 plus project conditions. The cost of this improvement is nominal.

10.0 IMPACT ANALYSIS FOR CEQA DETERMINATION

This section evaluates the CEQA checklist for impact evaluation.

A. Will the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system?
Based on the results of the analysis, the project does not degrade traffic operations below those acceptable in the City's General Plan after implementation of circulation improvements. The project is consistent with adopted plans and policies related to non-motorized travel in the area. Therefore, the project impact is considered less than significant.

B. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?
The project does not conflict with the County's CMP and does not propose changes to the City's LOS standards. The project does not have a significant impact at any analysis intersection based on the thresholds adopted by the City. After improvements are constructed, all study intersections will operate at satisfactory conditions. Therefore, the project impact is considered less than significant after mitigation.

C. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
The project does not propose any use that would affect or conflict with air traffic patterns. Therefore, the project impact is considered less than-significant.

D. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
Design of driveways will be based on City Code, which sets the standard for such design. It is not anticipated that traffic hazards will increase. Therefore, the project impact is considered less than significant.

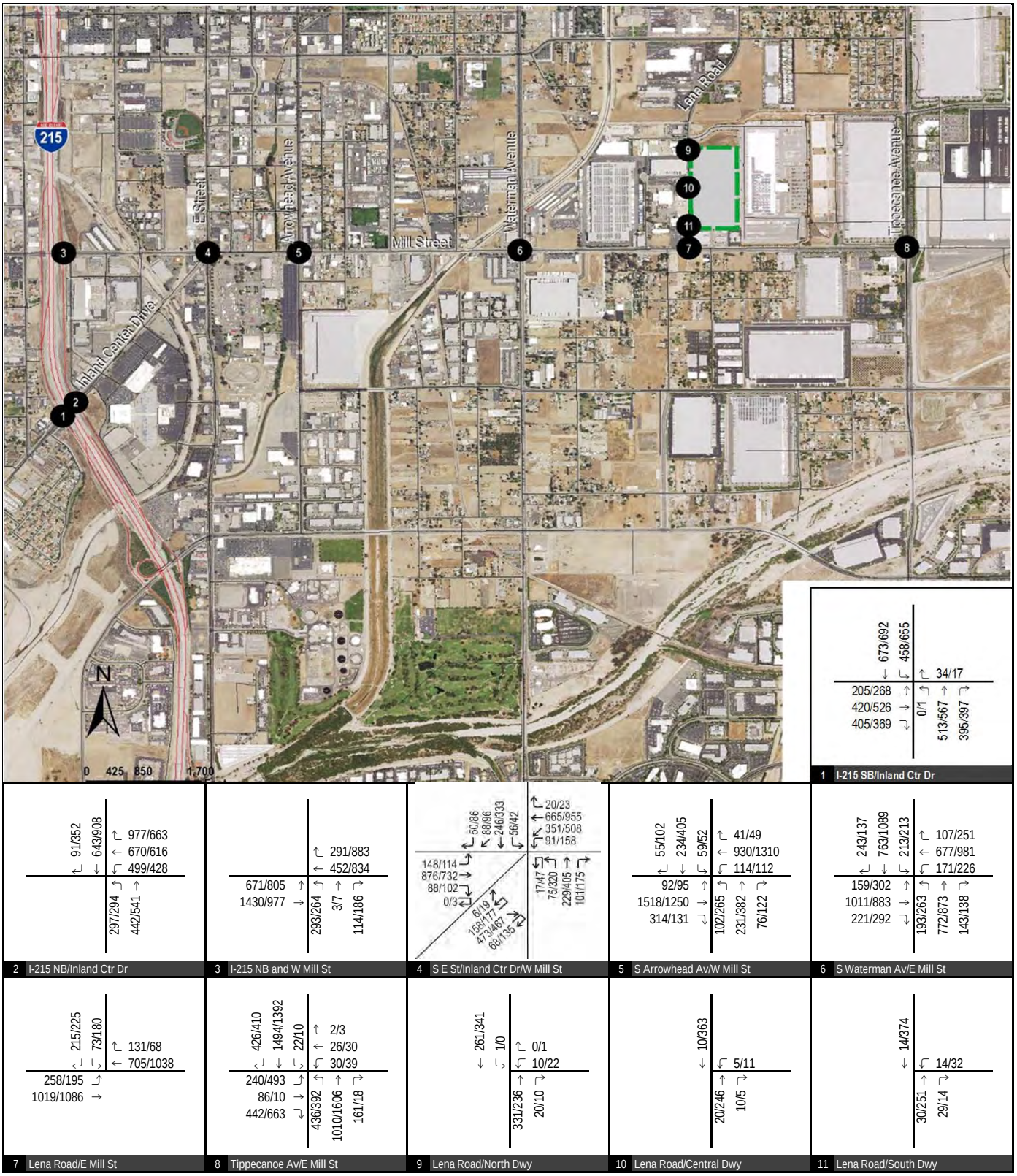


FIGURE 17

XX/YY AM/PM Trips

Lena Road and Mill Street
Year 2040 With Project Traffic Volumes

translutions
the tranportation solutions company...

C:\Dropbox\Tsols\Projects\Hillwood - Lena&Mill\Analysis\Z30 2040 WP.xlsx (10/31/2016)

Table H: Existing With Project With Improvements Levels of Service

Intersection	LOS Std.	Control	Without Improvement				With Improvement			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1 . I-215 SB/Inland Ctr Dr	D	Signal	28	C	30.6	C	28	C	30.6	C
2 . I-215 NB/Inland Ctr Dr	D	Signal	24.9	C	29.4	C	24.9	C	29.4	C
3 . I-215 NB and W Mill St	D	Signal	31.4	C	54.2	D	31.9	C	33.2	C
4 . S E St/Inland Ctr Dr/W Mill St	D	Signal	45.9	D	42.2	D	45.9	D	42.2	D
5 . S Arrowhead Av/W Mill St	D	Signal	27.2	C	27.5	C	27.2	C	27.5	C
6 . S Waterman Av/E Mill St	D	Signal	35.9	D	39	D	35.9	D	39	D
7 . Lena Road/E Mill St	D	Signal	30.9	C	29.2	C	30.9	C	29.2	C
8 . Tippecanoe Av/E Mill St	D	Signal	26.2	C	22.6	C	26.2	C	22.6	C
9 . Lena Road/North Dwy	D	TWSC	10.6	B	10.2	B	10.6	B	10.2	B
10 . Lena Road/Central Dwy	D	TWSC	10.7	B	10.3	B	10.7	B	10.3	B
11 . Lena Road/South Dwy	D	TWSC	10.9	B	10.5	B	10.9	B	10.5	B

Notes:

* Exceeds LOS Standard

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case approach/movement.

LOS = Level of Service

Bold: Intersections with Improvements

Table I: Opening Year With Project With Improvements Levels of Service

Intersection	LOS Std.	Control	Without Improvement					With Improvement			
			AM Peak Hour		PM Peak Hour			AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
1 . I-215 SB/Inland Ctr Dr	D	Signal	28	C	30.8	C		28	C	30.8	C
2 . I-215 NB/Inland Ctr Dr	D	Signal	25.6	C	29.6	C		25.6	C	29.6	C
3 . I-215 NB and W Mill St	D	Signal	31.5	C	59.4	E	*	31.8	C	35.3	D
4 . S E St/Inland Ctr Dr/W Mill St	D	Signal	47.4	D	44.8	D		47.4	D	44.8	D
5 . S Arrowhead Av/W Mill St	D	Signal	22.7	C	27.7	C		22.7	C	27.7	C
6 . S Waterman Av/E Mill St	D	Signal	34.1	C	36.7	D		34.1	C	36.7	D
7 . Lena Road/E Mill St	D	Signal	25.6	C	23.2	C		25.6	C	23.2	C
8 . Tippecanoe Av/E Mill St	D	Signal	28.4	C	23.4	C		28.4	C	23.4	C
9 . Lena Road/North Dwy	D	TWSC		A	10.3	B			A	10.3	B
10 . Lena Road/Central Dwy	D	TWSC		A	10.4	B			A	10.4	B
11 . Lena Road/South Dwy	D	TWSC		A	10.6	B			A	10.6	B

Notes:

* Exceeds LOS Standard

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case approach/movement.

LOS = Level of Service

Bold: Intersections with Improvements

Table J: Opening Year Cumulative With Project With Improvements Levels of Service

Intersection	LOS Std.	Control	Without Improvement					With Improvement			
			AM Peak Hour		PM Peak Hour			AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
1 . I-215 SB/Inland Ctr Dr	D	Signal	28.2	C	31.2	C		28.2	C	31.2	C
2 . I-215 NB/Inland Ctr Dr	D	Signal	25.9	C	29.7	C		25.9	C	29.7	C
3 . I-215 NB and W Mill St	D	Signal	31.4	C	60.5	E	*	30.3	C	34.9	C
4 . S E St/Inland Ctr Dr/W Mill St	D	Signal	53.8	D	49.2	D		53.8	D	49.2	D
5 . S Arrowhead Av/W Mill St	D	Signal	11.2	B	27.6	C		11.2	B	27.6	C
6 . S Waterman Av/E Mill St	D	Signal	35.1	D	37.9	D		35.1	D	37.9	D
7 . Lena Road/E Mill St	D	Signal	24.9	C	22.5	C		24.9	C	22.5	C
8 . Tippecanoe Av/E Mill St	D	Signal	31.7	C	24.7	C		31.7	C	24.7	C
9 . Lena Road/North Dwy	D	TWSC	10.8	B	10.3	B		10.8	B	10.3	B
10 . Lena Road/Central Dwy	D	TWSC	10.8	B	10.4	B		10.8	B	10.4	B
11 . Lena Road/South Dwy	D	TWSC	11.1	B	10.6	B		11.1	B	10.6	B

Notes:

* Exceeds LOS Standard

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case approach/movement.

LOS = Level of Service

Bold: Intersections with Improvements

Table K: Year 2040 With Project With Improvements Levels of Service

Intersection	LOS Std.	Control	Without Improvement					With Improvement			
			AM Peak Hour		PM Peak Hour			AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
1 . I-215 SB/Inland Ctr Dr	D	Signal	30.9	C	34.6	C		30.9	C	34.6	C
2 . I-215 NB/Inland Ctr Dr	D	Signal	35.7	D	39.4	D		35.7	D	39.4	D
3 . I-215 NB and W Mill St	D	Signal	36.3	D	>100	F	*	30.1	C	42.8	D
4 . S E St/Inland Ctr Dr/W Mill St	D	Signal	42.1	D	50.8	D		42.1	D	50.8	D
5 . S Arrowhead Av/W Mill St	D	Signal	43.3	D	25.6	C		43.3	D	25.6	C
6 . S Waterman Av/E Mill St	D	Signal	35.6	D	46.8	D		35.6	D	46.8	D
7 . Lena Road/E Mill St	D	Signal	23.9	C	21.8	C		23.9	C	21.8	C
8 . Tippecanoe Av/E Mill St	D	Signal	38.6	D	41.8	D		38.6	D	41.8	D
9 . Lena Road/North Dwy	D	TWSC	11.4	B	11	B		11.4	B	11	B
10 . Lena Road/Central Dwy	D	TWSC	9	A	11	B		9	A	11	B
11 . Lena Road/South Dwy	D	TWSC	9.1	A	11.4	B		9.1	A	11.4	B

Notes:

* Exceeds LOS Standard

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case approach/movement.

LOS = Level of Service

Bold: Intersections with Improvements

E. Result in inadequate emergency access?
The project will not result in inadequate emergency access. Therefore, the project impact is considered less than significant.

F. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?
The project will not change roadway designations from those in the City's General Plan. The project will also not result in removal of any of the facilities listed above. Therefore, the project impact is considered less than significant.

9.0 SUMMARY & CONCLUSIONS

The project proposes the construction of approximately 477,000 square feet of warehousing uses. The project is forecast to generate 52 trips in the a.m. peak hour, 57 trips in the p.m. peak hour, and 801 daily trips, which translate to 86 PCE trips during the a.m. peak hour, 93 PCE trips during the p.m. peak hour, and 1,324 daily PCE trips. The analysis was conducted using the City's guidelines, methodologies, and thresholds. Based on the analysis, the project does not create a direct significant impact at any study intersection under any analysis scenario. However, it is forecast that the intersection of I-215 Northbound ramps/Mill Street is anticipated to operate at unsatisfactory LOS during the p.m. peak hour under all analysis scenarios for both without and with project conditions. It should be noted that using the City's thresholds of significance, the proposed project will not create a significant impact even at this location. The recommended improvement is to restripe the third westbound through lane to a shared through-right turn lane for all analysis scenarios.

APPENDIX A:
TRAFFIC COUNTS

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

I-215 SB Ramps and Inland Center Dr , San Bernardino

Date: 10/13/2016

Day: Thursday

Project #: 16-6141-001

City: San Bernardino

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (I-215 SB Ramps)

Lanes	0.5	1	1.5		
AM	259	272	147	0	AM
NOON	0	0	0	0	NOON
PM	285	312	212	1	PM

Eastbound Approach (Inland Center Dr)

Lanes	AM	NOON	PM
	701	0	816
1	0	0	1
1	329	0	432
1	239	0	234

Westbound Approach

Lanes	AM	NOON	PM
0	0	0	0
2	442	0	531
2	128	0	370
	476	0	644

Northbound Approach

Lanes	0	0	0	
AM	639	0	0	0	AM
NOON	0	0	0	0	NOON
PM	916	0	0	0	PM

CONTROL: Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	678	0	
	0	0	
	809	1	
West Leg	701	0	816
	568	0	667
East Leg	570	0	901
	476	0	644
South Leg	639	0	
	0	0	
	916	0	

Total Volume Per Leg

	AM	NOON	PM
North Leg	678	0	810
West Leg	1269	0	1483
East Leg	1046	0	1545
South Leg	639	0	916

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-001 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

Cars

AM

NS/EW Streets:	I-215 SB Ramps			I-215 SB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	1	0.5	1	1	1	2	2	0	
7:00 AM	0	0	0	21	55	47	0	40	55	10	64	0	292
7:15 AM	0	0	0	22	73	54	0	65	77	28	82	0	401
7:30 AM	0	0	0	40	67	75	0	89	58	16	93	0	438
7:45 AM	0	0	0	51	57	75	0	101	49	28	147	0	508
8:00 AM	0	0	0	31	55	52	0	72	49	34	109	0	402
8:15 AM	0	0	0	28	50	45	0	73	50	38	85	0	369
8:30 AM	0	0	0	26	54	39	0	52	49	41	88	0	349
8:45 AM	0	0	0	32	63	64	0	64	58	36	100	0	417
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	251	474	451	0	556	445	231	768	0	3176
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	21.34%	40.31%	38.35%	0.00%	55.54%	44.46%	23.12%	76.88%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	144	252	256	0	327	233	106	431	0	1749
PEAK HR FACTOR :	0.000			0.891			0.933			0.767			0.861

UTURNS

NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-001 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

Cars

PM

NS/EW Streets:	I-215 SB Ramps			I-215 SB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	1	0.5	1	1	1	2	2	0	
4:00 PM	0	0	0	49	64	54	0	133	77	86	137	0	600
4:15 PM	0	0	0	50	52	56	0	97	58	74	117	0	504
4:30 PM	0	0	0	48	111	62	0	93	87	75	100	0	576
4:45 PM	0	0	0	47	70	54	0	99	49	78	110	0	507
5:00 PM	0	0	0	37	93	57	1	83	54	112	126	0	563
5:15 PM	0	0	0	74	67	101	0	104	70	90	121	0	627
5:30 PM	0	0	0	61	75	60	0	114	42	72	124	0	548
5:45 PM	0	0	0	38	66	65	0	131	67	85	157	0	609
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	404	598	509	1	854	504	672	992	0	4534
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	26.74%	39.58%	33.69%	0.07%	62.84%	37.09%	40.38%	59.62%	0.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	210	301	283	1	432	233	359	528	0	2347
PEAK HR FACTOR :	0.000			0.820			0.841			0.916			0.936

UTURNS

	NB	SB	EB	WB
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	2	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	2	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-001

Day: Thursday

City: San Bernardino

2-Axle HT

Date: 10/13/2016

AM

NS/EW Streets:	I-215 SB Ramps			I-215 SB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	1	0.5	1	1	1	2	2	0	
7:00 AM	0	0	0	0	2	1	0	0	1	2	1	0	7
7:15 AM	0	0	0	0	1	0	0	0	1	4	4	0	10
7:30 AM	0	0	0	1	4	0	0	0	1	3	0	0	9
7:45 AM	0	0	0	0	3	0	0	1	1	2	2	0	9
8:00 AM	0	0	0	1	3	0	0	0	0	1	1	0	6
8:15 AM	0	0	0	1	1	0	0	2	0	5	1	0	10
8:30 AM	0	0	0	2	1	0	0	0	1	3	1	0	8
8:45 AM	0	0	0	0	0	1	0	1	0	5	0	0	7
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	5	15	2	0	4	5	25	10	0	66
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	22.73%	68.18%	9.09%	0.00%	44.44%	55.56%	71.43%	28.57%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	2	11	0	0	1	3	10	7	0	34
PEAK HR FACTOR :	0.000			0.650			0.500			0.531			0.861

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-001

Day: Thursday

2-Axle HT

City: San Bernardino

Date: 10/13/2016

PM

NS/EW Streets:	I-215 SB Ramps			I-215 SB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	1	0.5	1	1	1	2	2	0	
4:00 PM	0	0	0	4	0	0	0	2	1	1	0	0	8
4:15 PM	0	0	0	1	0	0	0	2	0	1	2	0	6
4:30 PM	0	0	0	0	2	1	0	2	2	2	0	0	9
4:45 PM	0	0	0	0	0	0	0	0	0	2	1	0	3
5:00 PM	0	0	0	1	0	0	0	0	0	1	1	0	3
5:15 PM	0	0	0	1	0	1	0	0	0	0	1	0	3
5:30 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
5:45 PM	0	0	0	0	3	0	0	0	0	1	0	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	7	6	2	0	6	3	8	6	0	38
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	46.67%	40.00%	13.33%	0.00%	66.67%	33.33%	57.14%	42.86%	0.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	2	4	1	0	0	0	2	3	0	12
PEAK HR FACTOR :	0.000			0.583			0.000			0.625			0.936

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	2	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	2	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-001

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

AM

NS/EW Streets:	I-215 SB Ramps			I-215 SB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	1	0.5	1	1	1	2	2	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	1	0	0	0	1	0	0	0	2
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	1	2	1	0	4
8:30 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	3	0	0	0	2	4	4	0	13
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	50.00%	50.00%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	2	0	0	0	1	0	2	0	5
PEAK HR FACTOR :	0.000			0.500			0.250			0.250			0.861

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-001 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

3-Axle HT

PM

NS/EW Streets:	I-215 SB Ramps			I-215 SB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	1	0.5	1	1	1	2	2	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	1	0	0	0	0	3	0	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	4	0	0	0	0	3	0	0	7
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	4	0	0	0	0	3	0	0	7
PEAK HR FACTOR :	0.000			0.500			0.000			0.250			0.936

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	2	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	2	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-001 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

4-AxlePlus HT

AM

NS/EW Streets:	I-215 SB Ramps			I-215 SB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	1	0.5	1	1	1	2	2	0	
7:00 AM	0	0	0	0	1	0	0	0	0	2	0	0	3
7:15 AM	0	0	0	0	2	2	0	0	0	2	0	0	6
7:30 AM	0	0	0	1	1	0	0	0	0	1	0	0	3
7:45 AM	0	0	0	0	4	1	0	1	0	4	0	0	10
8:00 AM	0	0	0	0	0	0	0	0	2	5	2	0	9
8:15 AM	0	0	0	0	3	0	0	1	1	2	0	0	7
8:30 AM	0	0	0	0	4	0	0	1	1	6	0	0	12
8:45 AM	0	0	0	0	0	0	0	0	1	1	0	0	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	1	15	3	0	3	5	23	2	0	52
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	5.26%	78.95%	15.79%	0.00%	37.50%	62.50%	92.00%	8.00%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	1	7	3	0	1	2	12	2	0	28
PEAK HR FACTOR :	0.000			0.550			0.375			0.500			0.861

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-001

Day: Thursday

4-AxlePlus HT

City: San Bernardino

Date: 10/13/2016

PM

NS/EW Streets:	I-215 SB Ramps			I-215 SB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	1	0.5	1	1	1	2	2	0	
4:00 PM	0	0	0	0	0	0	0	1	0	2	1	0	4
4:15 PM	0	0	0	0	1	0	0	0	1	2	0	0	4
4:30 PM	0	0	0	0	5	0	0	0	0	2	0	0	7
4:45 PM	0	0	0	0	1	0	0	0	0	2	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	2
5:15 PM	0	0	0	0	1	1	0	0	1	1	0	0	4
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	1	0	0	0	0	3	0	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	10	1	0	1	2	14	1	0	29
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	90.91%	9.09%	0.00%	33.33%	66.67%	93.33%	6.67%	0.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	3	1	0	0	1	6	0	0	11
PEAK HR FACTOR :	0.000			0.500			0.250			0.500			0.936

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	2	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	2	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-001
N/S Street: I-215 SB Ramps
E/W Street: Inland Center Dr
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

AM	2
NOON	0
PM	8

0	AM
0	NOON
0	PM

AM	NOON	PM
0	0	0

NORTH LEG

AM	NOON	PM
0	0	0

WEST LEG

EAST LEG

0	0	0
AM	NOON	PM

SOUTH LEG

0	0	0
AM	NOON	PM

AM	2
NOON	0
PM	2

0	AM
0	NOON
2	PM

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-001
N/S Street: I-215 SB Ramps
E/W Street: Inland Center Dr
DATE: 10/13/2016
CITY: San Bernardino

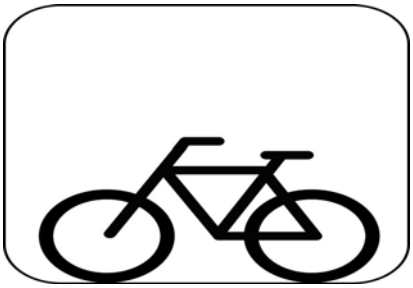
DAY: Thursday

AM	0	0	0
NOON	0	0	0
PM	0	0	0

NORTH LEG

AM	NOON	PM
0	0	0
2	0	2
0	0	0

WEST LEG



EAST LEG

AM	NOON	PM
0	0	0
2	0	4
0	0	0

SOUTH LEG

AM	0	0	0
NOON	0	0	0
PM	0	0	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-6141-001
N/S Street: I-215 SB Ramps
E/W Street: Inland Center Dr
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	1	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	1	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	1	0	2	0	0	0	0	0
TOTALS	**2**	**2**	**2**	**0**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	1	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**3**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	2	0	0	0	0
4:15 PM	0	1	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	3	0	2	2	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	5	0	0	0	0	0	0	0
5:45 PM	1	1	0	0	0	0	0	0
TOTALS	**9**	**2**	**2**	**4**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	1	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	2	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:30 PM	0	0	0	0	0	0	0	1	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**5**	**0**

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

I-215 NB Ramps and Inland Center Dr , San Bernardino

Date: 10/13/2016

Day: Thursday

Project #: 16-6141-002

City: San Bernardino

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (I-215 NB Ramps)

	Lanes	0	0	0		
AM		0	0	0	448	AM
NOON		0	0	0	0	NOON
PM		0	0	0	682	PM

Eastbound Approach (Inland Center Dr)

Lanes	AM	NOON	PM
	586	0	895
1	175	0	214
2	314	0	430
0	0	0	0

Westbound Approach

AM	NOON	PM	Lanes
22	0	189	0
235	0	626	4
0	0	0	0
746	0	743	

CONTROL: Signalized

Northbound Approach

AM	0	351	251	432	AM
NOON	0	0	0	0	NOON
PM	0	269	279	313	PM
		1	0.5	1.5	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	448	AM
	0	0	NOON
	0	682	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
586	0	895	257	0	815
489	0	644	746	0	743

	South Leg	
AM	0	1034
NOON	0	0
PM	0	861

Total Volume Per Leg

	North Leg
AM	448
NOON	0
PM	682

West Leg AM	NOON	PM	East Leg AM	NOON	PM
1075	0	1539	1003	0	1558

	South Leg
AM	1034
NOON	0
PM	861

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-002 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

Cars

AM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	1.5	0	0	0	1	2	0	0	4	0	
7:00 AM	44	50	72	0	0	0	24	31	0	0	28	4	253
7:15 AM	66	64	78	0	0	0	46	41	0	0	43	0	338
7:30 AM	82	60	113	0	0	0	52	78	0	0	31	2	418
7:45 AM	113	74	133	0	0	0	48	104	0	0	62	9	543
8:00 AM	80	52	84	0	0	0	36	66	0	0	60	5	383
8:15 AM	71	56	88	0	0	0	36	60	0	0	52	6	369
8:30 AM	63	55	71	0	0	0	32	50	0	0	68	5	344
8:45 AM	80	71	106	0	0	0	38	60	0	0	51	7	413
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	599	482	745	0	0	0	312	490	0	0	395	38	3061
APPROACH %'s :	32.80%	26.40%	40.80%	#DIV/0!	#DIV/0!	#DIV/0!	38.90%	61.10%	0.00%	0.00%	91.22%	8.78%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	346	242	418	0	0	0	172	308	0	0	205	22	1713
PEAK HR FACTOR :	0.786			0.000			0.789			0.799			0.789

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-002 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

Cars

PM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	1.5	0	0	0	1	2	0	0	4	0	
4:00 PM	78	76	64	0	0	0	69	105	0	0	145	48	585
4:15 PM	64	72	77	0	0	0	59	97	0	0	127	39	535
4:30 PM	39	54	82	0	0	0	44	96	0	0	151	58	524
4:45 PM	63	74	79	0	0	0	39	103	0	0	124	47	529
5:00 PM	56	80	62	0	0	0	39	80	0	0	171	66	554
5:15 PM	59	56	76	0	0	0	56	125	0	0	150	53	575
5:30 PM	67	60	89	0	0	0	65	113	0	0	145	32	571
5:45 PM	85	74	72	0	0	0	54	110	0	0	148	36	579
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	511	546	601	0	0	0	425	829	0	0	1161	379	4452
APPROACH %'s :	30.82%	32.93%	36.25%	#DIV/0!	#DIV/0!	#DIV/0!	33.89%	66.11%	0.00%	0.00%	75.39%	24.61%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	267	270	299	0	0	0	214	428	0	0	614	187	2279
PEAK HR FACTOR :	0.905			0.000			0.887			0.845			0.984

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-002

Day: Thursday

2-Axle HT

City: San Bernardino

Date: 10/13/2016

AM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Inland Center Dr			Inland Center Dr				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	0.5	1.5	0	0	0	1	2	0	0	4	0					
7:00 AM	0	0	1	0	0	0	0	0	0	0	2	0	3				
7:15 AM	2	2	2	0	0	0	0	0	0	0	6	0	12				
7:30 AM	0	0	0	0	0	0	0	1	0	0	4	0	5				
7:45 AM	2	0	0	0	0	0	0	1	0	0	3	0	6				
8:00 AM	0	1	0	0	0	0	0	1	0	0	3	0	5				
8:15 AM	0	3	4	0	0	0	2	1	0	0	5	0	15				
8:30 AM	1	2	1	0	0	0	0	3	0	0	4	0	11				
8:45 AM	0	1	2	0	0	0	0	0	0	0	4	0	7				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	5	9	10	0	0	0	2	7	0	0	31	0	64	0	0	0	0
APPROACH %'s :	20.83%	37.50%	41.67%	#DIV/0!	#DIV/0!	#DIV/0!	22.22%	77.78%	0.00%	0.00%	100.00%	0.00%					
PEAK HR START TIME :	730 AM												TOTAL				
PEAK HR VOL :	2	4	4	0	0	0	2	4	0	0	15	0	31				
PEAK HR FACTOR :	0.357			0.000			0.500			0.750			0.789				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-002

Day: Thursday

2-Axle HT

City: San Bernardino

Date: 10/13/2016

PM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	1.5	0	0	0	1	2	0	0	4	0	
4:00 PM	0	2	0	0	0	0	1	4	0	0	2	0	9
4:15 PM	1	2	3	0	0	0	0	3	0	0	2	0	11
4:30 PM	0	4	2	0	0	0	1	1	0	0	2	0	10
4:45 PM	0	1	0	0	0	0	0	0	0	0	3	0	4
5:00 PM	0	3	0	0	0	0	0	1	0	0	0	0	4
5:15 PM	0	0	2	0	0	0	0	1	0	0	1	1	5
5:30 PM	1	1	1	0	0	0	0	0	0	0	1	1	5
5:45 PM	1	3	1	0	0	0	0	0	0	0	1	0	6
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	16	9	0	0	0	2	10	0	0	12	2	54
APPROACH %'s :	10.71%	57.14%	32.14%	#DIV/0!	#DIV/0!	#DIV/0!	16.67%	83.33%	0.00%	0.00%	85.71%	14.29%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	2	7	4	0	0	0	0	2	0	0	3	2	20
PEAK HR FACTOR :	0.650			0.000			0.500			0.625			0.984

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-002

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

AM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	1.5	0	0	0	1	2	0	0	4	0	
7:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	0	1	0	0	0	0	0	0	0	2	0	3
7:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	2	1	1	0	0	0	0	0	0	0	2	0	6
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	0	0	0	0	0	0	0	2	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	4	6	0	0	0	0	0	0	0	6	0	18
APPROACH %'s :	16.67%	33.33%	50.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	2	2	4	0	0	0	0	0	0	0	2	0	10
PEAK HR FACTOR :	0.500			0.000			0.000			0.250			0.789

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-002

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

PM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	1.5	0	0	0	1	2	0	0	4	0	
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	1	1	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	3	5	0	0	0	0	0	0	0	3	0	11
APPROACH %'s :	0.00%	37.50%	62.50%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	1	2	0	0	0	0	0	0	0	3	0	6
PEAK HR FACTOR :	0.375			0.000			0.000			0.250			0.984

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-002 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

4-AxlePlus HT

AM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	1.5	0	0	0	1	2	0	0	4	0	
7:00 AM	0	0	1	0	0	0	0	0	0	0	2	0	3
7:15 AM	0	2	1	0	0	0	0	0	0	0	2	0	5
7:30 AM	0	0	1	0	0	0	0	1	0	0	1	0	3
7:45 AM	0	1	1	0	0	0	1	0	0	0	4	0	7
8:00 AM	0	1	0	0	0	0	0	0	0	0	6	0	7
8:15 AM	1	1	4	0	0	0	0	1	0	0	2	0	9
8:30 AM	0	2	2	0	0	0	1	0	0	0	6	0	11
8:45 AM	0	2	2	0	0	0	0	0	0	0	1	0	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	9	12	0	0	0	2	2	0	0	24	0	50
APPROACH %'s :	4.55%	40.91%	54.55%	#DIV/0!	#DIV/0!	#DIV/0!	50.00%	50.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	3	6	0	0	0	1	2	0	0	13	0	26
PEAK HR FACTOR :	0.417			0.000			0.750			0.542			0.789

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-002 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

4-AxlePlus HT

PM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Inland Center Dr			Inland Center Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	1.5	0	0	0	1	2	0	0	4	0	
4:00 PM	1	0	4	0	0	0	0	0	0	0	1	1	7
4:15 PM	0	0	0	0	0	0	1	0	0	0	2	0	3
4:30 PM	0	0	2	0	0	0	0	0	0	0	2	0	4
4:45 PM	0	1	2	0	0	0	0	0	0	0	2	0	5
5:00 PM	0	0	3	0	0	0	0	0	0	0	2	0	5
5:15 PM	0	0	2	0	0	0	0	0	0	0	1	0	3
5:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	1	1	0	0	0	0	0	0	0	3	0	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	2	16	0	0	0	1	0	0	0	13	1	34
APPROACH %'s :	5.26%	10.53%	84.21%	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	0.00%	92.86%	7.14%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	1	8	0	0	0	0	0	0	0	6	0	15
PEAK HR FACTOR :	0.750			0.000			0.000			0.500			0.984

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-002
N/S Street: I-215 NB Ramps
E/W Street: Inland Center Dr
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

NORTH LEG

AM	NOON	PM
4	0	2

AM	NOON	PM
2	0	0

WEST LEG

AM	NOON	PM
0	0	0

AM	NOON	PM
0	0	0

EAST LEG

AM	NOON	PM
0	0	0

AM	NOON	PM
0	0	0

SOUTH LEG

AM	NOON	PM
0	0	6

AM	NOON	PM
0	0	8

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-002
N/S Street: I-215 NB Ramps
E/W Street: Inland Center Dr
DATE: 10/13/2016
CITY: San Bernardino

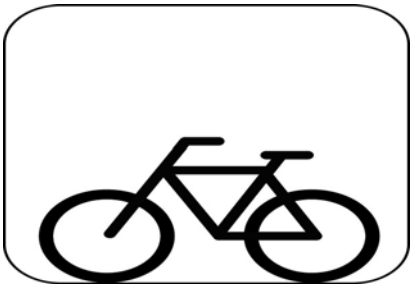
DAY: Thursday

AM	0	0	0
NOON	0	0	0
PM	0	0	0

NORTH LEG

AM	NOON	PM
0	0	0
2	0	4
0	0	0

WEST LEG



EAST LEG

AM	NOON	PM
0	0	0
2	0	3
0	0	0

SOUTH LEG

AM	0	0	0
NOON	0	0	0
PM	0	0	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-6141-002
N/S Street: I-215 NB Ramps
E/W Street: Inland Center Dr
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	2	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	0	0
8:00 AM	2	1	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	1	1	0	0	0	0	0	0
8:45 AM	1	0	0	0	0	0	0	0
TOTALS	**4**	**4**	**1**	**0**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	1	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**3**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	1	0	0	0	0	0	0
4:15 PM	3	1	0	0	0	0	0	0
4:30 PM	0	0	1	1	0	0	0	0
4:45 PM	0	0	0	1	0	0	0	0
5:00 PM	0	0	1	0	0	0	0	0
5:15 PM	1	0	3	4	0	0	0	0
5:30 PM	1	0	0	1	0	0	0	0
5:45 PM	0	0	2	3	0	0	0	0
TOTALS	**5**	**2**	**7**	**10**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	2	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	2	0	0	2	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**5**	**0**

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

I-215 NB Ramps and Mill St , San Bernardino

Date: 10/13/2016

Day: Thursday

Project #: 16-6141-003

City: San Bernardino

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (I-215 NB Ramps)

	Lanes 0	0	0		
AM	0	0	0	568	AM
NOON	0	0	0	0	NOON
PM	0	0	0	955	PM

Eastbound Approach (Mill St)

Lanes	AM	NOON	PM
	489	0	793
1	427	0	520
2	691	0	682
0	0	0	0

Westbound Approach

Lanes	AM	NOON	PM
1	139	0	430
3	303	0	560
0	0	0	0
	766	0	751

Northbound Approach

AM	0	186	2	75	AM
NOON	0	0	0	0	NOON
PM	0	233	5	69	PM
		1.5	0.5	1.5	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	568	AM
	0	0	NOON
	0	955	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
489	0	793	442	0	990
1118	0	1202	766	0	751

	South Leg	
AM	0	263
NOON	0	0
PM	0	307

Total Volume Per Leg

	North Leg
AM	568
NOON	0
PM	955

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
1607	0	1995	1208	0	1741

	South Leg
AM	263
NOON	0
PM	307

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-003

Day: Thursday

City: San Bernardino

Cars

Date: 10/13/2016

AM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Mill St			Mill St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1.5	0.5	1.5	0	0	0	1	2	0	0	3	1					
7:00 AM	47	1	8	0	0	0	88	143	0	0	33	15	335	0	0	0	0
7:15 AM	48	0	11	0	0	0	110	150	0	0	61	22	402	0	0	0	0
7:30 AM	45	1	23	0	0	0	123	157	0	0	66	31	446	0	0	0	0
7:45 AM	51	1	23	0	0	0	103	186	0	0	81	27	472	0	0	0	0
8:00 AM	38	0	15	0	0	0	80	157	0	0	73	45	408	0	0	0	0
8:15 AM	41	0	14	0	0	0	62	106	0	0	57	30	310	0	0	0	0
8:30 AM	40	0	9	0	0	0	58	121	0	0	67	28	323	0	0	0	0
8:45 AM	67	1	16	0	0	0	72	155	0	0	77	27	415	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	377	4	119	0	0	0	696	1175	0	0	515	225	3111	0	0	0	0
APPROACH %'s :	75.40%	0.80%	23.80%	#DIV/0!	#DIV/0!	#DIV/0!	37.20%	62.80%	0.00%	0.00%	69.59%	30.41%					
PEAK HR START TIME :	715 AM												TOTAL				
PEAK HR VOL :	182	2	72	0	0	0	416	650	0	0	281	125	1728				
PEAK HR FACTOR :	0.853			0.000			0.922			0.860			0.915				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-003

Day: Thursday

City: San Bernardino

Cars

Date: 10/13/2016

PM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Mill St			Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	1.5	0	0	0	1	2	0	0	3	1	
4:00 PM	59	2	13	0	0	0	111	127	0	0	109	100	521
4:15 PM	52	2	17	0	0	0	112	128	0	0	100	67	478
4:30 PM	63	2	18	0	0	0	114	132	0	0	129	109	567
4:45 PM	75	1	10	0	0	0	117	150	0	0	120	85	558
5:00 PM	42	2	16	0	0	0	139	145	0	0	123	105	572
5:15 PM	51	0	14	0	0	0	125	165	0	0	149	125	629
5:30 PM	67	0	18	0	0	0	122	181	0	0	155	102	645
5:45 PM	68	3	17	0	0	0	127	174	0	0	125	85	599
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	477	12	123	0	0	0	967	1202	0	0	1010	778	4569
APPROACH %'s :	77.94%	1.96%	20.10%	#DIV/0!	#DIV/0!	#DIV/0!	44.58%	55.42%	0.00%	0.00%	56.49%	43.51%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	228	5	65	0	0	0	513	665	0	0	552	417	2445
PEAK HR FACTOR :	0.847			0.000			0.972			0.884			0.948

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	1	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-003

Day: Thursday

City: San Bernardino

2-Axle HT

Date: 10/13/2016

AM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Mill St			Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	1.5	0	0	0	1	2	0	0	3	1	
7:00 AM	0	0	0	0	0	0	2	3	0	0	2	1	8
7:15 AM	1	0	0	0	0	0	2	7	0	0	4	2	16
7:30 AM	1	0	0	0	0	0	2	1	0	0	6	2	12
7:45 AM	0	0	0	0	0	0	2	3	0	0	4	0	9
8:00 AM	0	0	1	0	0	0	1	7	0	0	4	3	16
8:15 AM	1	0	0	0	0	0	1	2	0	0	2	1	7
8:30 AM	1	0	1	0	0	0	0	5	0	0	2	1	10
8:45 AM	0	0	1	0	0	0	0	5	0	0	1	2	9
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	0	3	0	0	0	10	33	0	0	25	12	87
APPROACH %'s :	57.14%	0.00%	42.86%	#DIV/0!	#DIV/0!	#DIV/0!	23.26%	76.74%	0.00%	0.00%	67.57%	32.43%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	2	0	1	0	0	0	7	18	0	0	18	7	53
PEAK HR FACTOR :	0.750			0.000			0.694			0.781			0.915

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-003

Day: Thursday

2-Axle HT

City: San Bernardino

Date: 10/13/2016

PM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Mill St			Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	1.5	0	0	0	1	2	0	0	3	1	
4:00 PM	3	0	2	0	0	0	0	3	0	0	0	0	8
4:15 PM	0	0	0	0	0	0	0	8	0	0	4	0	12
4:30 PM	1	0	1	0	0	0	1	3	0	0	1	1	8
4:45 PM	1	0	0	0	0	0	0	1	0	0	1	1	4
5:00 PM	2	0	0	0	0	0	0	2	0	0	1	0	5
5:15 PM	1	0	0	0	0	0	2	1	0	0	1	0	5
5:30 PM	1	0	1	0	0	0	3	1	0	0	2	0	8
5:45 PM	0	0	1	0	0	0	1	1	0	0	1	1	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	9	0	5	0	0	0	7	20	0	0	11	3	55
APPROACH %'s :	64.29%	0.00%	35.71%	#DIV/0!	#DIV/0!	#DIV/0!	25.93%	74.07%	0.00%	0.00%	78.57%	21.43%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	4	0	2	0	0	0	6	5	0	0	5	1	23
PEAK HR FACTOR :	0.750			0.000			0.688			0.750			0.948

UTURNS

	NB	SB	EB	WB
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	1	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
	NB	SB	EB	WB
	0	0	1	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-003

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

AM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Mill St			Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	1.5	0	0	0	1	2	0	0	3	1	
7:00 AM	1	0	1	0	0	0	0	2	0	0	0	0	4
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	1	1	0	0	2	0	4
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	2	0	0	0	0	0	2
8:15 AM	1	0	2	0	0	0	2	1	0	0	1	1	8
8:30 AM	0	0	0	0	0	0	1	1	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	0	3	0	0	0	6	8	0	0	3	1	23
APPROACH %'s :	40.00%	0.00%	60.00%	#DIV/0!	#DIV/0!	#DIV/0!	42.86%	57.14%	0.00%	0.00%	75.00%	25.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	3	3	0	0	2	0	8
PEAK HR FACTOR :	0.000			0.000			0.750			0.250			0.915

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-003

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

PM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Mill St			Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	1.5	0	0	0	1	2	0	0	3	1	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	2
4:15 PM	0	0	1	0	0	0	0	0	0	0	2	0	3
4:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	2
4:45 PM	1	0	0	0	0	0	0	1	0	0	1	0	3
5:00 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
5:15 PM	0	0	1	0	0	0	0	0	0	0	1	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	0	2	0	0	0	2	4	0	0	4	2	15
APPROACH %'s :	33.33%	0.00%	66.67%	#DIV/0!	#DIV/0!	#DIV/0!	33.33%	66.67%	0.00%	0.00%	66.67%	33.33%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	1	0	0	0	0	3	0	0	1	0	5
PEAK HR FACTOR :	0.250			0.000			0.250			0.250			0.948

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	1	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-003

Day: Thursday

City: San Bernardino

4-AxlePlus HT

Date: 10/13/2016

AM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Mill St			Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	1.5	0	0	0	1	2	0	0	3	1	
7:00 AM	0	0	0	0	0	0	1	4	0	0	1	0	6
7:15 AM	1	0	1	0	0	0	0	4	0	0	0	4	10
7:30 AM	0	0	0	0	0	0	1	8	0	0	0	0	9
7:45 AM	0	0	1	0	0	0	0	4	0	0	2	2	9
8:00 AM	1	0	0	0	0	0	0	4	0	0	0	1	6
8:15 AM	0	0	0	0	0	0	0	1	0	0	3	2	6
8:30 AM	0	0	1	0	0	0	0	2	0	0	2	5	10
8:45 AM	3	0	1	0	0	0	0	3	0	0	0	3	10
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	0	4	0	0	0	2	30	0	0	8	17	66
APPROACH %'s :	55.56%	0.00%	44.44%	#DIV/0!	#DIV/0!	#DIV/0!	6.25%	93.75%	0.00%	0.00%	32.00%	68.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	2	0	2	0	0	0	1	20	0	0	2	7	34
PEAK HR FACTOR :	0.500			0.000			0.583			0.563			0.915

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-003

Day: Thursday

City: San Bernardino

4-AxlePlus HT

Date: 10/13/2016

PM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Mill St			Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	1.5	0	0	0	1	2	0	0	3	1	
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	3	4
4:15 PM	0	0	0	0	0	0	0	5	0	0	1	1	7
4:30 PM	1	0	0	0	0	0	0	2	0	0	0	3	6
4:45 PM	0	0	0	0	0	0	0	3	0	0	1	5	9
5:00 PM	0	0	0	0	0	0	0	3	0	0	0	1	4
5:15 PM	1	0	0	0	0	0	0	3	0	0	0	4	8
5:30 PM	0	0	1	0	0	0	1	1	0	0	2	5	10
5:45 PM	0	0	0	0	0	0	0	2	0	0	0	2	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	0	1	0	0	0	1	20	0	0	4	24	52
APPROACH %'s :	66.67%	0.00%	33.33%	#DIV/0!	#DIV/0!	#DIV/0!	4.76%	95.24%	0.00%	0.00%	14.29%	85.71%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	0	1	0	0	0	1	9	0	0	2	12	26
PEAK HR FACTOR :	0.500			0.000			0.833			0.500			0.948

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	1	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-003
N/S Street: I-215 NB Ramps
E/W Street: Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

AM	2
NOON	0
PM	7

0	AM
0	NOON
2	PM

AM	NOON	PM
0	0	0

NORTH LEG

AM	NOON	PM
0	0	0

WEST LEG

EAST LEG

0	0	0
AM	NOON	PM

SOUTH LEG

0	0	0
AM	NOON	PM

AM	1
NOON	0
PM	0

3	AM
0	NOON
2	PM

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-003
N/S Street: I-215 NB Ramps
E/W Street: Mill St
DATE: 10/13/2016
CITY: San Bernardino

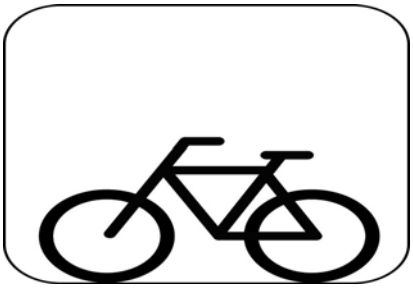
DAY: Thursday

AM	0	0	0
NOON	0	0	0
PM	0	0	0

NORTH LEG

WEST LEG

AM	NOON	PM
0	0	0
2	0	4
0	0	0



EAST LEG

AM	NOON	PM
0	0	0
1	0	3
0	0	0

SOUTH LEG

AM	0	0	0
NOON	0	0	0
PM	0	0	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-6141-003
N/S Street: I-215 NB Ramps
E/W Street: Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	0	0	0	0	0	0	0
7:15 AM	1	0	0	0	0	0	0	0
7:30 AM	0	0	0	3	0	0	0	0
7:45 AM	0	0	1	0	0	0	0	0
8:00 AM	1	0	0	0	0	0	0	0
8:15 AM	1	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**4**	**0**	**1**	**3**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	1	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	1	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**2**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	2	1	0	0	0	0
4:15 PM	0	1	0	1	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	2	0	1	0	0	0	0
5:15 PM	2	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	5	0	0	1	0	0	0	0
TOTALS	**7**	**3**	**2**	**4**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	2	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	1	0	0	1	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	3	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**5**	**0**

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-004
N/S Street: S E St/Inland Center Dr
E/W Street: W Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

AM	4
NOON	0
PM	5

6	AM
0	NOON
1	PM

AM	NOON	PM
6	0	1

AM	NOON	PM
0	0	5

NORTH LEG

WEST LEG

EAST LEG

4	0	3
AM	NOON	PM

0	0	0
AM	NOON	PM

SOUTH LEG

AM	0
NOON	0
PM	0

0	AM
0	NOON
0	PM

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-004
N/S Street: S E St/Inland Center Dr
E/W Street: W Mill St
DATE: 10/13/2016
CITY: San Bernardino

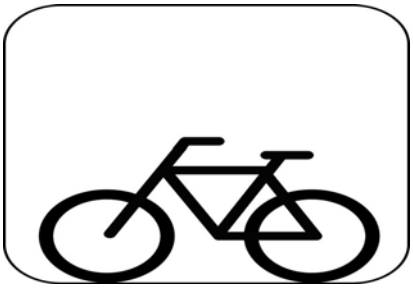
DAY: Thursday

AM	1	1	0
NOON	0	0	0
PM	0	4	0

NORTH LEG

AM	NOON	PM
0	0	0
2	0	1
0	0	0

WEST LEG



EAST LEG

AM	NOON	PM
0	0	0
1	0	1
0	0	0

SOUTH LEG

AM	0	0	0
NOON	0	0	0
PM	0	0	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-6141-004
N/S Street: S E St/Inland Center Dr
E/W Street: W Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	2	0	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	1	0	0	0	0	0	2	0
7:45 AM	0	1	0	0	0	0	0	0
8:00 AM	0	1	0	0	0	0	1	1
8:15 AM	2	1	0	0	0	0	2	1
8:30 AM	1	1	0	0	0	0	1	1
8:45 AM	1	3	0	0	0	0	0	3
TOTALS	**5**	**9**	**0**	**0**	**0**	**0**	**6**	**8**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	1	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	1	0	0	1	0	0	0	0
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**3**	**0**	**0**	**1**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	1	0	0	0	0	0	2
4:15 PM	1	0	0	0	0	0	0	1
4:30 PM	2	1	0	0	0	2	1	1
4:45 PM	0	0	0	0	0	2	1	0
5:00 PM	1	0	0	0	0	0	0	0
5:15 PM	2	0	0	0	0	1	1	0
5:30 PM	0	0	0	0	0	1	0	0
5:45 PM	3	1	0	0	3	0	0	0
TOTALS	**9**	**3**	**0**	**0**	**3**	**6**	**3**	**4**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	2	0	0	1	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	1	0	0	0	0	0	1	0
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**1**	**0**	**0**	**1**	**0**

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

S E St_Inland Center Dr and W Mill St , San Bernardino

Date: 10/13/2016

Day: Thursday

Project #: 16-6141-004

City: San Bernardino

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (S E St_Inland Center Dr)

	Lanes 0.5	2.5	1		
AM	25	120	35	174	AM
NOON	0	0	0	0	NOON
PM	51	198	27	325	PM

Eastbound Approach (W Mill St)

Lanes	AM	NOON	PM
	436	0	804
1	58	0	62
1	478	0	413
2	56	0	66

Westbound Approach

Lanes	AM	NOON	PM
0.5	13	0	15
1.5	369	0	543
2	52	0	98
	572	0	554

CONTROL: Signalized

Northbound Approach

				Lanes
AM	228	42	103	59
NOON	0	0	0	0
PM	362	210	248	114
Lanes		2	2	1

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		East Leg			West Leg			South Leg	
AM	180	174	434	0	656	436	0	804	228	204
NOON	0	0	572	0	554	592	0	541	0	0
PM	276	325							362	572

Total Volume Per Leg

	North Leg	East Leg			West Leg			South Leg
AM	354	1006	0	1210	1028	0	1345	432
NOON	0							0
PM	601							934

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-004

Day: Thursday

City: San Bernardino

Cars

Date: 10/13/2016

AM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	1	1	2.5	0.5	1	1	2	2	1.5	0.5	
7:00 AM	2	18	3	4	13	6	8	116	3	8	51	4	236
7:15 AM	7	12	12	9	22	9	11	117	6	6	50	3	264
7:30 AM	5	18	10	8	30	4	8	119	9	11	91	2	315
7:45 AM	7	22	17	14	33	5	21	128	11	8	86	0	352
8:00 AM	14	29	14	5	24	6	14	127	16	13	99	7	368
8:15 AM	9	25	12	7	23	8	14	71	18	15	71	4	277
8:30 AM	14	22	11	6	23	6	15	83	9	18	75	4	286
8:45 AM	12	28	11	5	29	7	12	78	19	13	68	7	289
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	70	174	90	58	197	51	103	839	91	92	591	31	2387
APPROACH %'s :	20.96%	52.10%	26.95%	18.95%	64.38%	16.67%	9.97%	81.22%	8.81%	12.89%	82.77%	4.34%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	35	94	53	34	110	23	57	445	54	47	347	13	1312
PEAK HR FACTOR :	0.798			0.803			0.869			0.855			0.891

UTURNS

	NB	SB	EB	WB
7:00 AM	0	2	0	0
7:15 AM	0	4	0	0
7:30 AM	0	2	0	0
7:45 AM	0	1	0	0
8:00 AM	3	2	0	0
8:15 AM	0	0	0	0
8:30 AM	3	1	0	0
8:45 AM	1	3	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	7	15	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-004

Day: Thursday

City: San Bernardino

Cars

Date: 10/13/2016

PM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	1	1	2.5	0.5	1	1	2	2	1.5	0.5	
4:00 PM	30	49	22	9	55	18	17	87	14	26	121	4	452
4:15 PM	38	43	21	6	70	15	22	86	20	15	98	6	440
4:30 PM	40	47	24	5	47	7	12	98	19	31	139	3	472
4:45 PM	40	59	30	8	51	7	17	92	20	16	110	3	453
5:00 PM	57	59	29	6	50	19	11	92	20	27	144	5	519
5:15 PM	73	76	30	8	41	18	21	111	6	19	131	4	538
5:30 PM	44	57	14	8	26	13	22	106	10	18	144	4	466
5:45 PM	38	56	21	11	42	8	23	102	16	13	114	6	450
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	360	446	191	61	382	105	145	774	125	165	1001	35	3790
APPROACH %'s :	36.11%	44.73%	19.16%	11.13%	69.71%	19.16%	13.89%	74.14%	11.97%	13.74%	83.35%	2.91%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	210	241	113	27	189	51	61	393	65	93	524	15	1982
PEAK HR FACTOR :	0.788			0.890			0.940			0.898			0.921

UTURNS

	NB	SB	EB	WB
4:00 PM	0	1	0	0
4:15 PM	4	1	0	0
4:30 PM	2	0	0	0
4:45 PM	3	1	0	0
5:00 PM	3	5	0	0
5:15 PM	8	2	0	0
5:30 PM	5	2	1	0
5:45 PM	2	3	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	27	15	1	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-004

Day: Thursday

City: San Bernardino

2-Axle HT

Date: 10/13/2016

AM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	1	1	2.5	0.5	1	1	2	2	1.5	0.5	
7:00 AM	1	2	0	0	3	0	0	3	0	1	0	0	10
7:15 AM	1	1	1	0	1	1	0	5	0	1	7	0	18
7:30 AM	1	3	1	0	2	2	0	2	0	0	2	0	13
7:45 AM	2	1	3	0	1	0	1	1	0	0	1	0	10
8:00 AM	2	3	0	0	4	0	0	3	2	0	4	0	18
8:15 AM	2	2	1	0	2	0	0	5	0	3	4	0	19
8:30 AM	1	2	0	0	2	0	0	4	1	2	1	0	13
8:45 AM	0	2	0	0	6	0	0	4	1	3	1	1	18
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	10	16	6	0	21	3	1	27	4	10	20	1	119
APPROACH %'s :	31.25%	50.00%	18.75%	0.00%	87.50%	12.50%	3.13%	84.38%	12.50%	32.26%	64.52%	3.23%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	7	9	5	0	9	2	1	11	2	3	11	0	60
PEAK HR FACTOR :	0.875			0.688			0.700			0.500			0.891

UTURNS			
NB	SB	EB	WB
0	2	0	0
0	4	0	0
0	2	0	0
0	1	0	0
3	2	0	0
0	0	0	0
3	1	0	0
1	3	0	0
NB	SB	EB	WB
7	15	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-004

Day: Thursday

City: San Bernardino

2-Axle HT

Date: 10/13/2016

PM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	1	1	2.5	0.5	1	1	2	2	1.5	0.5	
4:00 PM	0	1	0	0	5	0	1	1	3	1	2	0	14
4:15 PM	0	2	0	0	6	0	0	3	3	0	3	0	17
4:30 PM	0	2	0	0	3	0	0	2	0	0	0	0	7
4:45 PM	0	2	1	0	1	0	0	0	1	2	2	0	9
5:00 PM	0	1	0	0	2	0	1	1	0	2	1	0	8
5:15 PM	0	2	0	0	3	0	0	4	0	0	1	0	10
5:30 PM	0	2	0	0	2	0	0	2	0	0	1	0	7
5:45 PM	0	2	0	0	2	0	0	2	0	0	0	0	6
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	14	1	0	24	0	2	15	7	5	10	0	78
APPROACH %'s :	0.00%	93.33%	6.67%	0.00%	100.00%	0.00%	8.33%	62.50%	29.17%	33.33%	66.67%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	7	1	0	9	0	1	7	1	4	4	0	34
PEAK HR FACTOR :	0.667			0.750			0.563			0.500			0.921

UTURNS			
NB	SB	EB	WB
0	1	0	0
4	1	0	0
2	0	0	0
3	1	0	0
3	5	0	0
8	2	0	0
5	2	1	0
2	3	0	0
NB	SB	EB	WB
27	15	1	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-004

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

AM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	1	1	2.5	0.5	1	1	2	2	1.5	0.5	
7:00 AM	0	0	0	0	0	1	1	3	0	0	0	0	5
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:30 AM	0	0	1	0	0	0	0	1	0	0	1	0	3
7:45 AM	0	0	0	1	0	0	0	1	0	0	0	0	2
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	1	0	1	1	0	3
8:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	1	1	1	1	1	10	0	1	3	0	19
APPROACH %'s :	0.00%	0.00%	100.00%	33.33%	33.33%	33.33%	9.09%	90.91%	0.00%	25.00%	75.00%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	1	1	1	0	0	3	0	1	2	0	9
PEAK HR FACTOR :	0.250			0.500			0.750			0.375			0.891

UTURNS			
NB	SB	EB	WB
0	2	0	0
0	4	0	0
0	2	0	0
0	1	0	0
3	2	0	0
0	0	0	0
3	1	0	0
1	3	0	0
NB	SB	EB	WB
7	15	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-004

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

PM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	1	1	2.5	0.5	1	1	2	2	1.5	0.5	
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
4:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	3	0	0	1	0	4
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	1	0	0	0	0	0	0	0	0	0	1	0	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	0	5	0	0	5	0	11
APPROACH %'s :	100.00%	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	4	0	0	1	0	5
PEAK HR FACTOR :	0.000			0.000			0.333			0.250			0.921

UTURNS	NB	SB	EB	WB
4:00 PM	0	1	0	0
4:15 PM	4	1	0	0
4:30 PM	2	0	0	0
4:45 PM	3	1	0	0
5:00 PM	3	5	0	0
5:15 PM	8	2	0	0
5:30 PM	5	2	1	0
5:45 PM	2	3	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	27	15	1	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-004

Day: Thursday

City: San Bernardino

4-AxlePlus HT

Date: 10/13/2016

AM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	1	1	2.5	0.5	1	1	2	2	1.5	0.5	
7:00 AM	0	0	0	0	0	0	0	5	0	0	1	0	6
7:15 AM	0	0	0	0	0	0	0	3	0	0	2	0	5
7:30 AM	0	0	0	0	0	0	0	8	0	0	1	0	9
7:45 AM	0	0	0	0	0	0	0	3	0	0	2	0	5
8:00 AM	0	0	0	0	0	0	0	6	0	0	1	0	7
8:15 AM	0	0	0	0	0	0	0	2	0	1	5	0	8
8:30 AM	0	0	0	0	0	0	0	3	0	0	7	0	10
8:45 AM	0	0	0	0	0	0	0	2	0	0	3	0	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	32	0	1	22	0	55
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	4.35%	95.65%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	19	0	1	9	0	29
PEAK HR FACTOR :	0.000			0.000			0.594			0.417			0.891

UTURNS			
NB	SB	EB	WB
0	2	0	0
0	4	0	0
0	2	0	0
0	1	0	0
3	2	0	0
0	0	0	0
3	1	0	0
1	3	0	0
NB	SB	EB	WB
7	15	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-004

Day: Thursday

City: San Bernardino

4-AxlePlus HT

Date: 10/13/2016

PM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	1	1	2.5	0.5	1	1	2	2	1.5	0.5	
4:00 PM	0	0	0	0	0	0	0	5	0	0	3	1	9
4:15 PM	0	0	0	0	0	0	0	4	0	0	1	0	5
4:30 PM	0	0	0	0	0	0	0	2	0	1	5	0	8
4:45 PM	0	0	0	0	0	0	0	1	0	0	4	0	5
5:00 PM	0	0	0	0	0	0	0	5	0	0	1	0	6
5:15 PM	0	0	0	0	0	0	0	1	0	0	4	0	5
5:30 PM	0	0	0	0	0	0	0	3	0	0	6	0	9
5:45 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	22	0	1	26	1	50
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	3.57%	92.86%	3.57%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	9	0	1	14	0	24
PEAK HR FACTOR :	0.000			0.000			0.450			0.625			0.921

UTURNS			
NB	SB	EB	WB
0	1	0	0
4	1	0	0
2	0	0	0
3	1	0	0
3	5	0	0
8	2	0	0
5	2	1	0
2	3	0	0
NB	SB	EB	WB
27	15	1	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-005
N/S Street: S Arrowhead Ave
E/W Street: W Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

NORTH LEG

AM	NOON	PM
4	0	3

2	AM
0	NOON
1	PM

WEST LEG

AM	NOON	PM
2	0	0

1	0	0
AM	NOON	PM

EAST LEG

AM	NOON	PM
0	0	1

0	0	0
AM	NOON	PM

SOUTH LEG

AM	NOON	PM
1	0	0

0	AM
0	NOON
0	PM

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-005
N/S Street: S Arrowhead Ave
E/W Street: W Mill St
DATE: 10/13/2016
CITY: San Bernardino

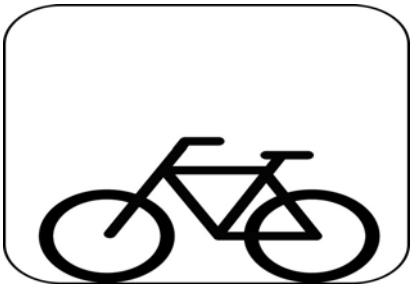
DAY: Thursday

AM	0	1	0
NOON	0	0	0
PM	0	1	0

NORTH LEG

WEST LEG

AM	NOON	PM
0	0	0
1	0	0
0	0	0



EAST LEG

AM	NOON	PM
0	0	0
1	0	1
0	0	0

SOUTH LEG

AM	0	1	1
NOON	0	0	0
PM	0	2	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-6141-005
N/S Street: S Arrowhead Ave
E/W Street: W Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	1	0	0	0	0	1	0
7:15 AM	0	0	1	0	0	0	0	1
7:30 AM	2	1	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1
8:00 AM	0	1	0	0	0	1	0	0
8:15 AM	0	2	0	0	1	0	0	0
8:30 AM	0	0	1	0	0	0	0	0
8:45 AM	1	0	0	1	0	0	0	0
TOTALS	**5**	**5**	**2**	**1**	**1**	**1**	**1**	**2**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	1	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	0	0	0	0	1	0
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	0
TOTALS	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**3**	**0**	**0**	**1**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	1	0	0	0	0	0	0
4:15 PM	2	0	0	0	0	0	0	0
4:30 PM	1	0	0	0	0	1	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	1	0	0	0
5:30 PM	0	1	0	0	0	0	0	0
5:45 PM	1	0	0	0	0	0	0	0
TOTALS	**4**	**2**	**0**	**0**	**1**	**1**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

S Arrowhead Ave and W Mill St , San Bernardino

Date: 10/13/2016

Day: Thursday

Project #: 16-6141-005

City: San Bernardino

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (S Arrowhead Ave)

Lanes	0	2	1		
AM	37	164	37	224	AM
NOON	0	0	0	0	NOON
PM	64	257	36	361	PM

Eastbound Approach (W Mill St)

Lanes	AM	NOON	PM
	557	0	927
1	56	0	60
2	658	0	653
0	158	0	105

Westbound Approach

Lanes	AM	NOON	PM
0	26	0	39
2	456	0	726
1	55	0	71
	744	0	759

Northbound Approach

AM	377	64	142	49	AM
NOON	0	0	0	0	NOON
PM	433	137	262	70	PM
		1	2	0	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	238	224	AM
	0	0	NOON
	357	361	PM

West Leg			East Leg		
AM	NOON	PM			
557	0	927	537	0	836
872	0	818	744	0	759
			AM	NOON	PM

	South Leg	
AM	377	255
NOON	0	0
PM	433	469

Total Volume Per Leg

	North Leg
AM	462
NOON	0
PM	718

West Leg			East Leg		
AM	NOON	PM			
1429	0	1745	1281	0	1595
			AM	NOON	PM

	South Leg
AM	632
NOON	0
PM	902

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-005 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

Cars

AM

NS/EW Streets:	S Arrowhead Ave			S Arrowhead Ave			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	11	19	9	1	20	6	5	118	43	8	53	3	296
7:15 AM	12	33	4	7	35	7	9	123	46	7	86	4	373
7:30 AM	16	32	18	8	29	11	9	156	30	14	95	5	423
7:45 AM	17	32	13	15	53	9	21	173	38	11	135	6	523
8:00 AM	16	37	13	6	42	8	14	166	36	16	105	10	469
8:15 AM	23	32	10	10	29	7	4	115	9	12	94	2	347
8:30 AM	16	30	5	2	20	8	14	117	17	8	107	13	357
8:45 AM	19	24	12	7	27	9	11	104	14	16	106	7	356
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	130	239	84	56	255	65	87	1072	233	92	781	50	3144
APPROACH %'s :	28.70%	52.76%	18.54%	14.89%	67.82%	17.29%	6.25%	77.01%	16.74%	9.97%	84.62%	5.42%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	61	134	48	36	159	35	53	618	150	48	421	25	1788
PEAK HR FACTOR :	0.920			0.747			0.885			0.813			0.855

UTURNS			
NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-005 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

Cars

PM

NS/EW Streets:	S Arrowhead Ave			S Arrowhead Ave			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
4:00 PM	28	57	17	7	65	18	15	140	20	16	161	11	555
4:15 PM	21	51	15	16	45	14	12	152	15	22	132	8	503
4:30 PM	34	68	15	8	69	19	16	149	25	19	161	13	596
4:45 PM	34	60	13	8	55	11	10	154	22	13	165	6	551
5:00 PM	39	68	21	7	73	20	13	162	18	18	207	10	656
5:15 PM	27	62	20	13	52	12	19	165	35	19	160	10	594
5:30 PM	49	65	18	10	56	15	6	127	45	12	150	8	561
5:45 PM	40	51	18	5	36	11	15	161	42	7	118	11	515
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	272	482	137	74	451	120	106	1210	222	126	1254	77	4531
APPROACH %'s :	30.53%	54.10%	15.38%	11.47%	69.92%	18.60%	6.89%	78.67%	14.43%	8.65%	86.07%	5.28%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	134	258	69	36	249	62	58	630	100	69	693	39	2397
PEAK HR FACTOR :	0.900			0.868			0.900			0.852			0.913

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-005

Day: Thursday

City: San Bernardino

2-Axle HT

Date: 10/13/2016

AM

NS/EW Streets:	S Arrowhead Ave			S Arrowhead Ave			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	2	0	0	3	1	2	1	1	2	1	0	13
7:15 AM	1	1	0	0	2	1	2	3	1	0	7	0	18
7:30 AM	1	1	0	0	1	0	0	4	0	4	2	1	14
7:45 AM	1	3	0	0	0	0	1	3	0	1	6	0	15
8:00 AM	0	1	1	1	0	1	0	2	2	0	1	0	9
8:15 AM	1	0	1	0	0	0	0	6	1	1	8	0	18
8:30 AM	0	0	0	0	2	0	0	6	0	1	5	1	15
8:45 AM	2	0	0	0	0	1	0	3	1	3	9	0	19
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	6	8	2	1	8	4	5	28	6	12	39	2	121
APPROACH %'s :	37.50%	50.00%	12.50%	7.69%	61.54%	30.77%	12.82%	71.79%	15.38%	22.64%	73.58%	3.77%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	3	6	1	1	3	2	3	12	3	5	16	1	56
PEAK HR FACTOR :	0.625			0.500			0.750			0.786			0.855

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-005 | **Day:** Thursday

2-Axle HT

City: San Bernardino | **Date:** 10/13/2016

PM

NS/EW Streets:	S Arrowhead Ave			S Arrowhead Ave			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
4:00 PM	1	1	0	0	4	0	0	3	0	0	2	0	11
4:15 PM	0	2	0	2	7	1	0	1	0	1	3	0	17
4:30 PM	0	1	0	0	1	0	0	2	2	0	2	0	8
4:45 PM	0	0	0	0	3	0	1	1	1	0	3	0	9
5:00 PM	0	1	0	0	2	2	0	3	0	1	3	0	12
5:15 PM	0	1	1	0	0	0	0	3	1	0	2	0	8
5:30 PM	0	0	0	0	0	1	0	1	1	0	1	1	5
5:45 PM	0	1	0	0	0	0	0	1	1	0	2	0	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	7	1	2	17	4	1	15	6	2	18	1	75
APPROACH %'s :	11.11%	77.78%	11.11%	8.70%	73.91%	17.39%	4.55%	68.18%	27.27%	9.52%	85.71%	4.76%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	3	1	0	6	2	1	9	4	1	10	0	37
PEAK HR FACTOR :	0.500			0.500			0.875			0.688			0.913

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-005

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

AM

NS/EW Streets:	S Arrowhead Ave			S Arrowhead Ave			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	1	1	0	0	0	1	2	0	0	0	0	5
7:15 AM	0	0	0	0	1	0	0	1	0	1	2	0	5
7:30 AM	0	0	0	0	0	0	0	3	0	0	0	0	3
7:45 AM	0	0	0	0	1	0	0	2	0	0	0	0	3
8:00 AM	0	0	0	0	0	0	0	1	1	0	1	0	3
8:15 AM	2	0	1	0	0	0	0	3	0	0	1	0	7
8:30 AM	0	1	1	0	0	0	1	0	1	0	1	2	7
8:45 AM	0	1	0	0	1	2	0	1	0	0	0	0	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	3	3	0	3	2	2	13	2	1	5	2	38
APPROACH %'s :	25.00%	37.50%	37.50%	0.00%	60.00%	40.00%	11.76%	76.47%	11.76%	12.50%	62.50%	25.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	2	0	0	7	1	1	3	0	14
PEAK HR FACTOR :	0.000			0.500			0.667			0.333			0.855

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-005 | **Day:** Thursday

3-Axle HT

City: San Bernardino | **Date:** 10/13/2016

PM

NS/EW Streets:	S Arrowhead Ave			S Arrowhead Ave			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	6	0	6
4:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:45 PM	1	0	0	0	0	0	0	0	0	0	1	0	2
5:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:45 PM	1	0	0	0	0	0	0	1	0	0	1	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	1	0	0	2	0	0	5	0	0	9	0	19
APPROACH %'s :	66.67%	33.33%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	1	1	0	0	2	0	0	2	0	0	1	0	7
PEAK HR FACTOR :	0.500			0.500			0.250			0.250			0.913

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-005 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

4-AxlePlus HT

AM

NS/EW Streets:	S Arrowhead Ave			S Arrowhead Ave			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	0	0	0	0	0	0	5	0	0	5	0	10
7:15 AM	0	1	0	0	0	0	0	4	1	0	3	0	9
7:30 AM	0	1	0	0	0	0	0	9	1	1	3	0	15
7:45 AM	0	0	0	0	0	0	0	4	0	0	4	0	8
8:00 AM	0	0	0	0	0	0	0	4	2	0	6	0	12
8:15 AM	0	0	0	0	0	0	0	2	0	0	8	0	10
8:30 AM	1	0	0	0	0	0	0	7	0	0	9	0	17
8:45 AM	0	0	0	0	0	0	0	3	0	0	3	0	6
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	2	0	0	0	0	0	38	4	1	41	0	87
APPROACH %'s :	33.33%	66.67%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	90.48%	9.52%	2.38%	97.62%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	2	0	0	0	0	0	21	4	1	16	0	44
PEAK HR FACTOR :	0.500			0.000			0.625			0.708			0.855

UTURNS			
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-005 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

4-AxlePlus HT

PM

NS/EW Streets:	S Arrowhead Ave			S Arrowhead Ave			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
4:00 PM	0	0	0	0	0	0	0	5	2	0	7	0	14
4:15 PM	0	0	1	0	0	0	1	5	0	0	3	0	10
4:30 PM	1	0	0	0	0	0	0	3	0	0	7	0	11
4:45 PM	1	0	0	0	0	0	0	2	0	0	6	0	9
5:00 PM	0	0	0	0	0	0	0	6	0	0	4	0	10
5:15 PM	0	0	0	0	0	0	1	1	1	1	5	0	9
5:30 PM	1	0	0	0	0	0	0	6	0	0	8	0	15
5:45 PM	0	0	0	0	0	0	0	5	0	0	3	0	8
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	0	1	0	0	0	2	33	3	1	43	0	86
APPROACH %'s :	75.00%	0.00%	25.00%	#DIV/0!	#DIV/0!	#DIV/0!	5.26%	86.84%	7.89%	2.27%	97.73%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	2	0	0	0	0	0	1	12	1	1	22	0	39
PEAK HR FACTOR :	0.500			0.000			0.583			0.821			0.913

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-006
N/S Street: S Waterman Ave
E/W Street: E Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

NORTH LEG

AM	NOON	PM
2	0	2

AM	NOON	PM
1	0	2

WEST LEG

AM	NOON	PM
4	0	1

AM	NOON	PM
4	0	1

EAST LEG

AM	NOON	PM
1	0	6

AM	NOON	PM
2	0	4

SOUTH LEG

AM	NOON	PM
4	0	13

AM	NOON	PM
6	0	2

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-006
N/S Street: S Waterman Ave
E/W Street: E Mill St
DATE: 10/13/2016
CITY: San Bernardino

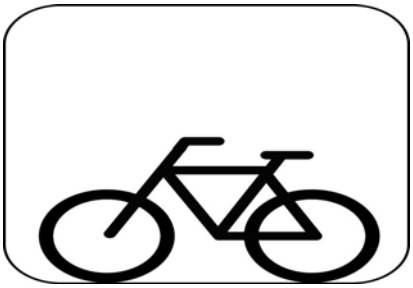
DAY: Thursday

AM	0	0	0
NOON	0	0	0
PM	0	1	0

NORTH LEG

AM	NOON	PM
0	0	0
3	0	2
0	0	0

WEST LEG



EAST LEG

AM	NOON	PM
0	0	0
1	0	3
0	0	0

SOUTH LEG

AM	1	1	0
NOON	0	0	0
PM	0	0	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-6141-006
N/S Street: S Waterman Ave
E/W Street: E Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	0	0	0	0
7:30 AM	0	0	1	1	0	0	3	0
7:45 AM	0	0	1	3	0	0	0	3
8:00 AM	0	0	2	1	1	0	1	0
8:15 AM	2	1	0	1	1	1	0	1
8:30 AM	0	0	1	0	0	0	0	0
8:45 AM	0	0	1	0	0	0	0	0
TOTALS	**2**	**1**	**6**	**7**	**2**	**1**	**4**	**4**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	1	0
7:45 AM	1	0	0	0	0	0	0	3	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0
TOTALS	**1**	**1**	**0**	**0**	**0**	**0**	**1**	**3**	**0**	**0**	**1**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	2	0	2	0	1	5	1	0
4:15 PM	0	0	3	2	1	1	0	0
4:30 PM	0	0	6	0	0	0	0	0
4:45 PM	0	2	2	0	2	0	0	1
5:00 PM	1	2	2	1	1	0	0	1
5:15 PM	0	0	2	0	0	0	0	0
5:30 PM	3	2	1	1	2	1	2	1
5:45 PM	0	2	1	1	0	0	1	2
TOTALS	**6**	**8**	**19**	**5**	**7**	**7**	**4**	**5**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	1	0	0	2	0
4:15 PM	0	0	0	0	1	0	0	1	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	1
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**4**	**1**

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

S Waterman Ave and E Mill St , San Bernardino

Date: 10/13/2016

Day: Thursday

Project #: 16-6141-006

City: San Bernardino

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (S Waterman Ave)

	Lanes 0	3	1		
AM	107	549	98	646	AM
NOON	0	0	0	0	NOON
PM	101	694	114	909	PM

Eastbound Approach (E Mill St)

Lanes	AM	NOON	PM
	537	0	725
1	98	0	154
2	435	0	413
1	153	0	176

Westbound Approach

AM	NOON	PM	Lanes
74	0	99	1
303	0	471	2
116	0	139	1
624	0	611	

CONTROL: Signalized

Northbound Approach

AM	818	127	474	91	AM
NOON	0	0	0	0	NOON
PM	1009	153	656	84	PM
		1	3	0	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	754	646	AM
	0	0	NOON
	909	909	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
537	0	725	493	0	709
686	0	743	624	0	611

	South Leg	
AM	818	692
NOON	0	0
PM	1009	893

Total Volume Per Leg

	North Leg
AM	1400
NOON	0
PM	1818

West Leg AM	NOON	PM	East Leg AM	NOON	PM
1223	0	1468	1117	0	1320

	South Leg
AM	1510
NOON	0
PM	1902

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-006

Day: Thursday

City: San Bernardino

Cars

Date: 10/13/2016

AM

NS/EW Streets:	S Waterman Ave			S Waterman Ave			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	3	0	1	2	1	1	2	1	
7:00 AM	20	86	20	22	80	13	13	83	27	14	31	7	416
7:15 AM	24	84	16	23	97	20	9	85	26	21	48	7	460
7:30 AM	26	100	21	24	137	33	15	99	29	18	61	8	571
7:45 AM	31	123	29	31	166	29	25	114	43	31	94	15	731
8:00 AM	34	116	14	13	139	24	28	95	41	31	56	30	621
8:15 AM	26	118	15	26	93	19	26	94	31	22	68	18	556
8:30 AM	24	127	21	29	101	21	25	74	26	19	62	25	554
8:45 AM	30	103	20	21	106	18	30	63	22	13	61	13	500
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	215	857	156	189	919	177	171	707	245	169	481	123	4409
APPROACH %'s :	17.51%	69.79%	12.70%	14.71%	71.52%	13.77%	15.23%	62.96%	21.82%	21.86%	62.23%	15.91%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	117	457	79	94	535	105	94	402	144	102	279	71	2479
PEAK HR FACTOR :		0.892			0.812			0.879			0.807		0.848

UTURNS			
NB	SB	EB	WB
3	4	2	0
1	4	1	2
7	6	1	2
6	5	1	4
5	2	1	10
2	6	1	0
1	6	2	2
6	4	0	1
NB	SB	EB	WB
31	37	9	21

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-006

Day: Thursday

City: San Bernardino

Cars

Date: 10/13/2016

PM

NS/EW Streets:	S Waterman Ave			S Waterman Ave			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	3	0	1	2	1	1	2	1	
4:00 PM	38	159	18	24	142	27	37	75	27	32	108	30	717
4:15 PM	37	148	20	17	176	36	43	94	41	29	64	22	727
4:30 PM	33	162	17	33	190	23	26	96	52	29	119	26	806
4:45 PM	37	157	14	22	165	28	36	87	43	29	98	24	740
5:00 PM	29	150	24	25	166	23	53	115	44	45	134	31	839
5:15 PM	46	180	20	32	166	25	38	97	31	23	90	16	764
5:30 PM	36	147	15	26	150	28	38	102	41	29	87	16	715
5:45 PM	24	140	21	38	133	29	26	118	34	21	70	18	672
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	280	1243	149	217	1288	219	297	784	313	237	770	183	5980
APPROACH %'s :	16.75%	74.34%	8.91%	12.59%	74.71%	12.70%	21.31%	56.24%	22.45%	19.92%	64.71%	15.38%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	145	649	75	112	687	99	153	395	170	126	441	97	3149
PEAK HR FACTOR :		0.883			0.913			0.847			0.790		0.938

UTURNS	NB	SB	EB	WB
4:00 PM	2	6	2	0
4:15 PM	1	8	3	0
4:30 PM	2	8	3	0
4:45 PM	4	6	2	2
5:00 PM	2	11	0	2
5:15 PM	3	9	0	2
5:30 PM	3	7	5	1
5:45 PM	2	8	1	1
	NB	SB	EB	WB
TOTAL VOLUMES :	19	63	16	8

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-006

Day: Thursday

City: San Bernardino

2-Axle HT

Date: 10/13/2016

AM

NS/EW Streets:	S Waterman Ave			S Waterman Ave			E Mill St			E Mill St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	0	1	3	0	1	2	1	1	2	1					
7:00 AM	1	4	1	1	3	0	0	1	2	3	1	1	18	3	4	2	0
7:15 AM	2	3	0	0	3	0	0	3	2	0	4	0	17	1	4	1	2
7:30 AM	1	6	0	1	4	1	0	2	1	0	1	1	18	7	6	1	2
7:45 AM	1	2	2	1	1	0	0	3	1	0	6	1	18	6	5	1	4
8:00 AM	1	2	0	0	4	0	1	2	1	2	1	1	15	5	2	1	10
8:15 AM	2	3	2	0	1	0	0	8	2	0	3	0	21	2	6	1	0
8:30 AM	0	4	0	0	2	0	0	4	0	1	1	0	12	1	6	2	2
8:45 AM	1	1	0	0	6	1	1	2	1	1	5	0	19	6	4	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	9	25	5	3	24	2	2	25	10	7	22	4	138	31	37	9	21
APPROACH %'s :	23.08%	64.10%	12.82%	10.34%	82.76%	6.90%	5.41%	67.57%	27.03%	21.21%	66.67%	12.12%					

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	5	13	4	2	10	1	1	15	5	2	11	3	72
PEAK HR FACTOR :	0.786			0.542			0.525			0.571			0.848

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-006

Day: Thursday

City: San Bernardino

2-Axle HT

Date: 10/13/2016

PM

NS/EW Streets:	S Waterman Ave			S Waterman Ave			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	3	0	1	2	1	1	2	1	
4:00 PM	0	2	2	0	6	0	0	2	0	1	2	0	15
4:15 PM	1	2	0	2	4	1	1	2	0	1	2	1	17
4:30 PM	2	1	0	1	3	0	0	1	1	0	3	0	12
4:45 PM	2	0	0	0	0	0	0	3	0	0	3	1	9
5:00 PM	0	2	0	1	1	0	0	1	1	0	2	0	8
5:15 PM	0	0	0	0	1	0	0	2	0	0	1	0	4
5:30 PM	0	1	0	0	1	0	0	1	1	1	2	0	7
5:45 PM	0	1	0	1	0	0	0	1	0	0	3	0	6
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	9	2	5	16	1	1	13	3	3	18	2	78
APPROACH %'s :	31.25%	56.25%	12.50%	22.73%	72.73%	4.55%	5.88%	76.47%	17.65%	13.04%	78.26%	8.70%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	4	3	0	2	5	0	0	7	2	0	9	1	33
PEAK HR FACTOR :	0.583			0.438			0.750			0.625			0.938

UTURNS			
NB	SB	EB	WB
2	6	2	0
1	8	3	0
2	8	3	0
4	6	2	2
2	11	0	2
3	9	0	2
3	7	5	1
2	8	1	1
NB	SB	EB	WB
19	63	16	8

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-006

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

AM

NS/EW Streets:	S Waterman Ave			S Waterman Ave			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	3	0	1	2	1	1	2	1	
7:00 AM	1	0	0	0	0	0	0	2	0	0	0	0	3
7:15 AM	0	1	0	0	0	0	1	0	0	0	2	0	4
7:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
7:45 AM	0	0	0	0	2	1	1	2	0	1	0	0	7
8:00 AM	1	0	0	1	0	0	0	0	1	0	1	0	4
8:15 AM	1	0	1	0	0	0	1	0	0	0	2	0	5
8:30 AM	1	0	1	0	0	0	1	0	0	0	2	0	5
8:45 AM	0	2	1	0	0	0	1	2	0	1	0	0	7
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	3	3	1	2	1	6	6	1	2	7	0	36
APPROACH %'s :	40.00%	30.00%	30.00%	25.00%	50.00%	25.00%	46.15%	46.15%	7.69%	22.22%	77.78%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	2	0	1	1	2	1	3	2	1	1	3	0	17
PEAK HR FACTOR :	0.375			0.333			0.500			0.500			0.848

UTURNS			
NB	SB	EB	WB
3	4	2	0
1	4	1	2
7	6	1	2
6	5	1	4
5	2	1	10
2	6	1	0
1	6	2	2
6	4	0	1
NB	SB	EB	WB
31	37	9	21

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-006

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

PM

NS/EW Streets:	S Waterman Ave			S Waterman Ave			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	3	0	1	2	1	1	2	1	
4:00 PM	0	0	0	0	2	0	0	0	0	0	4	0	6
4:15 PM	1	0	2	0	2	0	0	1	0	0	1	0	7
4:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	1	0	0	1	0	0	0	1	0	2	0	5
5:00 PM	0	1	1	0	0	0	0	1	1	0	0	0	4
5:15 PM	0	0	0	0	1	2	1	2	0	1	0	0	7
5:30 PM	0	1	0	1	0	0	0	0	1	1	0	0	4
5:45 PM	0	0	0	0	0	0	0	1	0	0	3	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	3	3	1	6	2	1	5	3	2	10	0	38
APPROACH %'s :	25.00%	37.50%	37.50%	11.11%	66.67%	22.22%	11.11%	55.56%	33.33%	16.67%	83.33%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	1	2	1	0	2	2	1	3	2	1	2	0	17
PEAK HR FACTOR :	0.500			0.333			0.500			0.375			0.938

UTURNS			
NB	SB	EB	WB
2	6	2	0
1	8	3	0
2	8	3	0
4	6	2	2
2	11	0	2
3	9	0	2
3	7	5	1
2	8	1	1
NB	SB	EB	WB
19	63	16	8

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-006

Day: Thursday

City: San Bernardino

4-AxlePlus HT

Date: 10/13/2016

AM

NS/EW Streets:	S Waterman Ave			S Waterman Ave			E Mill St			E Mill St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	0	1	3	0	1	2	1	1	2	1					
7:00 AM	0	0	1	0	1	0	0	4	1	0	5	0	12	3	4	2	0
7:15 AM	1	1	1	1	0	0	0	3	0	1	5	0	13	1	4	1	2
7:30 AM	0	1	2	0	1	0	0	6	2	2	1	0	15	7	6	1	2
7:45 AM	1	0	2	1	0	0	0	3	0	4	2	0	13	6	5	1	4
8:00 AM	1	1	1	0	0	0	0	5	1	0	2	0	11	5	2	1	10
8:15 AM	1	2	2	0	1	0	0	2	0	5	5	0	18	2	6	1	0
8:30 AM	1	1	0	0	1	0	0	7	0	0	7	0	17	1	6	2	2
8:45 AM	0	1	3	0	1	0	0	2	1	2	3	0	13	6	4	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	5	7	12	2	5	0	0	32	5	14	30	0	112	31	37	9	21
APPROACH %'s :	20.83%	29.17%	50.00%	28.57%	71.43%	0.00%	0.00%	86.49%	13.51%	31.82%	68.18%	0.00%					

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	3	4	7	1	2	0	0	16	3	11	10	0	57
PEAK HR FACTOR :	0.700			0.750			0.594			0.525			0.848

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-006

Day: Thursday

4-AxlePlus HT

City: San Bernardino

Date: 10/13/2016

PM

NS/EW Streets:	S Waterman Ave			S Waterman Ave			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	3	0	1	2	1	1	2	1	
4:00 PM	0	0	1	0	0	0	0	5	0	4	6	0	16
4:15 PM	0	2	1	1	0	0	1	4	0	1	3	1	14
4:30 PM	0	0	2	0	0	0	0	2	0	5	8	1	18
4:45 PM	0	1	0	0	0	0	0	2	0	1	4	0	8
5:00 PM	0	1	5	0	0	0	0	3	2	4	4	0	19
5:15 PM	3	0	1	0	0	0	0	1	0	2	3	0	10
5:30 PM	0	0	2	0	0	0	0	4	0	1	7	1	15
5:45 PM	1	0	2	1	0	0	0	3	1	1	2	0	11
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	4	14	2	0	0	1	24	3	19	37	3	111
APPROACH %'s :	18.18%	18.18%	63.64%	100.00%	0.00%	0.00%	3.57%	85.71%	10.71%	32.20%	62.71%	5.08%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	3	2	8	0	0	0	0	8	2	12	19	1	55
PEAK HR FACTOR :	0.542			0.000			0.500			0.571			0.938

UTURNS

	NB	SB	EB	WB
4:00 PM	2	6	2	0
4:15 PM	1	8	3	0
4:30 PM	2	8	3	0
4:45 PM	4	6	2	2
5:00 PM	2	11	0	2
5:15 PM	3	9	0	2
5:30 PM	3	7	5	1
5:45 PM	2	8	1	1
	NB	SB	EB	WB
TOTAL VOLUMES :	19	63	16	8

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Lena Rd and E Mill St , San Bernardino

Date: 10/13/2016

Day: Thursday

Project #: 16-6141-007

City: San Bernardino

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach

Lena Rd

	Lanes 1.5	0	1.5		
AM	112	0	49	229	AM
NOON	0	0	0	0	NOON
PM	155	0	90	138	PM

Eastbound Approach

E Mill St

Lanes	AM	NOON	PM
	409	0	540
1	155	0	106
2	381	0	467
0	0	0	0

Westbound Approach

Lanes	AM	NOON	PM
1	74	0	32
2	297	0	385
0	0	0	0
	430	0	557

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM
		0	0	0	Lanes

Total Ins & Outs

	North Leg		
	161	229	AM
	0	0	NOON
	245	138	PM

West Leg			East Leg		
AM	NOON	PM			
409	0	540	371	0	417
536	0	573	430	0	557
			AM	NOON	PM

	South Leg	
AM	0	0
NOON	0	0
PM	0	0

Total Volume Per Leg

	North Leg	
	390	AM
	0	NOON
	383	PM

West Leg			East Leg		
AM	NOON	PM			
945	0	1113	801	0	974
			AM	NOON	PM

	South Leg
AM	0
NOON	0
PM	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-007

Day: Thursday

City: San Bernardino

Cars

Date: 10/13/2016

AM

NS/EW Streets:	Lena Rd			Lena Rd			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
7:00 AM	0	0	0	4	0	11	27	77	0	0	44	18	181
7:15 AM	0	0	0	5	0	15	32	77	0	0	61	24	214
7:30 AM	0	0	0	8	0	20	38	84	0	0	75	21	246
7:45 AM	0	0	0	13	0	33	35	96	0	0	95	22	294
8:00 AM	0	0	0	10	0	32	35	94	0	0	54	14	239
8:15 AM	0	0	0	15	0	18	40	76	0	0	51	13	213
8:30 AM	0	0	0	14	0	31	27	67	0	0	57	21	217
8:45 AM	0	0	0	7	0	13	24	56	0	0	51	21	172
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	76	0	173	258	627	0	0	488	154	1776
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	30.52%	0.00%	69.48%	29.15%	70.85%	0.00%	0.00%	76.01%	23.99%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	46	0	103	148	350	0	0	275	70	992
PEAK HR FACTOR :	0.000			0.810			0.950			0.737			0.844

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-007

Day: Thursday

City: San Bernardino

Cars

Date: 10/13/2016

PM

NS/EW Streets:	Lena Rd			Lena Rd			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
4:00 PM	0	0	0	18	0	28	22	87	0	0	103	13	271
4:15 PM	0	0	0	10	0	32	32	88	0	0	67	12	241
4:30 PM	0	0	0	30	0	48	31	103	0	0	92	10	314
4:45 PM	0	0	0	14	0	32	24	103	0	0	81	10	264
5:00 PM	0	0	0	33	0	50	21	122	0	0	103	8	337
5:15 PM	0	0	0	9	0	23	25	120	0	0	86	3	266
5:30 PM	0	0	0	10	0	39	26	101	0	0	83	9	268
5:45 PM	0	0	0	7	0	16	24	121	0	0	67	2	237
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	131	0	268	205	845	0	0	682	67	2198
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	32.83%	0.00%	67.17%	19.52%	80.48%	0.00%	0.00%	91.05%	8.95%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	86	0	153	101	448	0	0	362	31	1181
PEAK HR FACTOR :	0.000			0.720			0.947			0.885			0.876

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-007

Day: Thursday

City: San Bernardino

2-Axle HT

Date: 10/13/2016

AM

NS/EW Streets:	Lena Rd			Lena Rd			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
7:00 AM	0	0	0	0	0	0	0	2	0	0	1	0	3
7:15 AM	0	0	0	1	0	0	0	2	0	0	4	0	7
7:30 AM	0	0	0	0	0	0	1	0	0	0	1	0	2
7:45 AM	0	0	0	0	0	2	1	4	0	0	2	0	9
8:00 AM	0	0	0	1	0	0	1	1	0	0	3	0	6
8:15 AM	0	0	0	0	0	0	1	5	0	0	2	0	8
8:30 AM	0	0	0	0	0	1	0	3	0	0	1	0	5
8:45 AM	0	0	0	0	0	2	0	2	0	0	3	1	8
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	2	0	5	4	19	0	0	17	1	48
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	28.57%	0.00%	71.43%	17.39%	82.61%	0.00%	0.00%	94.44%	5.56%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	1	0	2	4	10	0	0	8	0	25
PEAK HR FACTOR :	0.000			0.375			0.583			0.667			0.844

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-007

Day: Thursday

2-Axle HT

City: San Bernardino

Date: 10/13/2016

PM

NS/EW Streets:	Lena Rd			Lena Rd			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
4:00 PM	0	0	0	0	0	2	0	2	0	0	4	3	11
4:15 PM	0	0	0	0	0	2	0	2	0	0	4	1	9
4:30 PM	0	0	0	1	0	1	1	3	0	0	1	0	7
4:45 PM	0	0	0	0	0	0	0	3	0	0	3	0	6
5:00 PM	0	0	0	1	0	0	0	1	0	0	0	0	2
5:15 PM	0	0	0	1	0	0	0	2	0	0	0	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	3
5:45 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	3	0	5	1	14	0	0	17	4	44
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	37.50%	0.00%	62.50%	6.67%	93.33%	0.00%	0.00%	80.95%	19.05%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	3	0	1	1	9	0	0	4	0	18
PEAK HR FACTOR :	0.000			0.500			0.625			0.333			0.876

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-007

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

AM

NS/EW Streets:	Lena Rd			Lena Rd			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
7:00 AM	0	0	0	0	0	0	0	3	0	0	0	0	3
7:15 AM	0	0	0	0	0	2	0	0	0	0	1	0	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	2	0	0	1	0	4
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	1	2
8:15 AM	0	0	0	0	0	1	2	0	0	0	1	1	5
8:30 AM	0	0	0	1	0	1	0	0	0	0	3	0	5
8:45 AM	0	0	0	1	0	0	1	2	0	0	2	1	7
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	2	0	5	3	8	0	0	8	3	29
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	28.57%	0.00%	71.43%	27.27%	72.73%	0.00%	0.00%	72.73%	27.27%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	2	2	3	0	0	2	2	11
PEAK HR FACTOR :	0.000			0.500			0.625			0.500			0.844

UTURNS			
NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-007

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

PM

NS/EW Streets:	Lena Rd			Lena Rd			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
4:00 PM	0	0	0	0	0	0	1	0	0	0	3	1	5
4:15 PM	0	0	0	0	0	0	2	1	0	0	0	1	4
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	1	2	0	0	0	0	3
5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	1	1	1	0	0	0	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	1	0	1	6	4	0	0	3	2	17
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	50.00%	0.00%	50.00%	60.00%	40.00%	0.00%	0.00%	60.00%	40.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	2	2	0	0	0	0	4
PEAK HR FACTOR :	0.000			0.000			0.333			0.000			0.876

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-007

Day: Thursday

City: San Bernardino

4-AxlePlus HT

Date: 10/13/2016

AM

NS/EW Streets:	Lena Rd			Lena Rd			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
7:00 AM	0	0	0	0	0	1	0	1	0	0	4	0	6
7:15 AM	0	0	0	0	0	0	0	8	0	0	2	2	12
7:30 AM	0	0	0	0	0	1	0	8	0	0	4	0	13
7:45 AM	0	0	0	0	0	0	0	4	0	0	3	0	7
8:00 AM	0	0	0	1	0	1	1	4	0	0	1	1	9
8:15 AM	0	0	0	1	0	3	0	2	0	0	4	1	11
8:30 AM	0	0	0	0	0	2	0	6	0	0	1	1	10
8:45 AM	0	0	0	0	0	0	1	3	0	0	2	1	7
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	2	0	8	2	36	0	0	21	6	75
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	20.00%	0.00%	80.00%	5.26%	94.74%	0.00%	0.00%	77.78%	22.22%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	2	0	5	1	18	0	0	12	2	40
PEAK HR FACTOR :	0.000			0.438			0.594			0.700			0.844

UTURNS			
NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-007

Day: Thursday

City: San Bernardino

4-AxlePlus HT

Date: 10/13/2016

PM

NS/EW Streets:	Lena Rd			Lena Rd			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
4:00 PM	0	0	0	1	0	1	0	2	0	0	7	0	11
4:15 PM	0	0	0	0	0	0	0	5	0	0	5	0	10
4:30 PM	0	0	0	0	0	1	0	1	0	0	11	0	13
4:45 PM	0	0	0	0	0	0	1	0	0	0	1	1	3
5:00 PM	0	0	0	1	0	0	1	7	0	0	4	0	13
5:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	3
5:30 PM	0	0	0	0	0	1	3	1	0	0	5	1	11
5:45 PM	0	0	0	0	0	0	0	2	0	0	2	1	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	2	0	3	5	18	0	0	38	3	69
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	40.00%	0.00%	60.00%	21.74%	78.26%	0.00%	0.00%	92.68%	7.32%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	1	0	1	2	8	0	0	19	1	32
PEAK HR FACTOR :	0.000			0.500			0.313			0.455			0.876

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-007
N/S Street: Lena Rd
E/W Street: E Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

NORTH LEG

AM	NOON	PM
0	0	0

AM	NOON	PM
3	0	2

WEST LEG

AM	NOON	PM
4	0	0

AM	NOON	PM
7	0	1

EAST LEG

AM	NOON	PM
0	0	0

AM	NOON	PM
0	0	0

SOUTH LEG

AM	NOON	PM
0	0	0

AM	NOON	PM
0	0	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-007
N/S Street: Lena Rd
E/W Street: E Mill St
DATE: 10/13/2016
CITY: San Bernardino

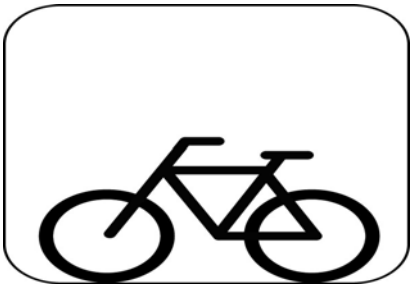
DAY: Thursday

AM	0	0	0
NOON	0	0	0
PM	0	0	0

NORTH LEG

WEST LEG

AM	NOON	PM
0	0	0
0	0	0
0	0	0



EAST LEG

AM	NOON	PM
1	0	0
1	0	2
0	0	0

SOUTH LEG

AM	0	0	0
NOON	0	0	0
PM	0	0	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-6141-007
N/S Street: Lena Rd
E/W Street: E Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	1	1
7:15 AM	0	3	0	0	0	0	3	3
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	3	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	1	0
8:30 AM	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	1	0
TOTALS	**0**	**3**	**0**	**0**	**0**	**0**	**9**	**5**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	2	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	1
TOTALS	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**1**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-008
N/S Street: Tippecanoe Ave
E/W Street: E Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

AM	0
NOON	0
PM	0

0	AM
0	NOON
0	PM

AM	NOON	PM
1	0	1

NORTH LEG

AM	NOON	PM
2	0	3

WEST LEG

EAST LEG

0	0	1
AM	NOON	PM

SOUTH LEG

0	0	0
AM	NOON	PM

AM	0
NOON	0
PM	0

2	AM
0	NOON
0	PM

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-008
N/S Street: Tippecanoe Ave
E/W Street: E Mill St
DATE: 10/13/2016
CITY: San Bernardino

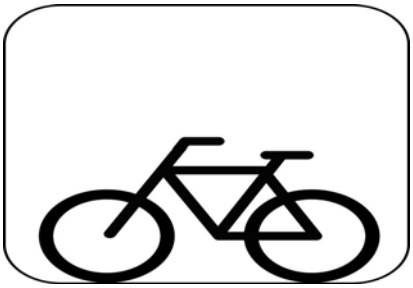
DAY: Thursday

AM	1	1	0
NOON	0	0	0
PM	0	1	0

NORTH LEG

AM	NOON	PM
0	0	0
0	0	0
0	0	0

WEST LEG



EAST LEG

AM	NOON	PM
0	0	0
0	0	0
0	0	0

SOUTH LEG

AM	0	2	0
NOON	0	0	0
PM	0	3	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-6141-008
N/S Street: Tippecanoe Ave
E/W Street: E Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	2	0	2	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	1	0	1
8:45 AM	0	0	0	0	0	0	1	0
TOTALS	**0**	**0**	**0**	**2**	**0**	**3**	**2**	**2**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	1	1	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	0	0	0	0	0
8:30 AM	0	1	0	0	1	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**4**	**0**	**0**	**1**	**2**	**1**	**0**	**0**	**0**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	0	0	2	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	1	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	2	1	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**3**	**3**	**1**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	2	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Tippecanoe Ave and E Mill St , San Bernardino

Date: 10/13/2016

Day: Thursday

Project #: 16-6141-008

City: San Bernardino

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Peak Hour Summary

Southbound Approach (Tippecanoe Ave)

	Lanes 1	2	1		
AM	246	870	12	796	AM
NOON	0	0	0	0	NOON
PM	193	904	5	1345	PM

Eastbound Approach (E Mill St)

Lanes	AM	NOON	PM
	444	0	307
1.5	129	0	284
0.5	37	0	4
1	160	0	232

Westbound Approach

Lanes	AM	NOON	PM
1	2	0	2
2	9	0	12
1	12	0	14
	98	0	17

Northbound Approach

AM	1042	189	665	49	AM
NOON	0	0	0	0	NOON
PM	1150	102	1059	8	PM
		1	3	0	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	1128	796	AM
	0	0	NOON
	1102	1345	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
444	0	307	23	0	28
326	0	520	98	0	17

	South Leg	
AM	1042	903
NOON	0	0
PM	1150	1169

Total Volume Per Leg

	North Leg
AM	1924
NOON	0
PM	2447

West Leg AM	NOON	PM	East Leg AM	NOON	PM
770	0	827	121	0	45

	South Leg
AM	1945
NOON	0
PM	2319

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-008

Day: Thursday

City: San Bernardino

Cars

Date: 10/13/2016

AM

NS/EW Streets:	Tippecanoe Ave			Tippecanoe Ave			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	1	1.5	0.5	1	1	2	1	
7:00 AM	34	177	10	0	188	37	28	1	30	5	1	1	512
7:15 AM	40	139	4	6	186	53	36	7	38	1	1	0	511
7:30 AM	39	155	3	4	228	62	31	4	38	2	2	1	569
7:45 AM	62	169	3	1	242	88	30	6	39	0	1	0	641
8:00 AM	33	162	4	3	158	35	48	3	33	5	1	2	487
8:15 AM	35	149	4	2	130	35	37	1	35	2	1	2	433
8:30 AM	40	123	6	2	139	43	29	2	24	2	1	3	414
8:45 AM	33	120	5	1	137	39	24	1	19	4	2	1	386
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	316	1194	39	19	1408	392	263	25	256	21	10	10	3953
APPROACH %'s :	20.40%	77.08%	2.52%	1.04%	77.41%	21.55%	48.35%	4.60%	47.06%	51.22%	24.39%	24.39%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	175	640	20	11	844	240	125	18	145	8	5	2	2233
PEAK HR FACTOR :		0.892			0.827			0.889			0.536		0.871

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	3	0	0
0	0	0	0
0	1	0	0
0	0	0	0
1	1	0	0
0	1	0	0
NB	SB	EB	WB
1	6	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-008

Day: Thursday

City: San Bernardino

Cars

Date: 10/13/2016

PM

NS/EW Streets:	Tippecanoe Ave			Tippecanoe Ave			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	1	1.5	0.5	1	1	2	1	
4:00 PM	30	230	3	0	175	52	47	0	48	3	6	3	597
4:15 PM	19	248	1	0	208	29	50	3	32	1	4	0	595
4:30 PM	26	257	0	0	213	39	71	1	76	4	8	3	698
4:45 PM	24	243	0	0	201	46	66	0	44	2	1	0	627
5:00 PM	13	245	1	2	260	57	69	2	78	0	0	1	728
5:15 PM	25	274	2	2	199	52	67	0	47	4	0	1	673
5:30 PM	29	283	1	0	228	35	79	0	55	2	5	0	717
5:45 PM	26	203	1	0	219	37	62	2	54	1	1	0	606
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	192	1983	9	4	1703	347	511	8	434	17	25	8	5241
APPROACH %'s :	8.79%	90.80%	0.41%	0.19%	82.91%	16.89%	53.62%	0.84%	45.54%	34.00%	50.00%	16.00%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	91	1045	4	4	888	190	281	2	224	8	6	2	2745
PEAK HR FACTOR :		0.911			0.848			0.851			0.571		0.943

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	1	0	0
0	0	0	0
1	0	0	0
NB	SB	EB	WB
1	2	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-008

Day: Thursday

2-Axle HT

City: San Bernardino

Date: 10/13/2016

AM

NS/EW Streets:	Tippecanoe Ave			Tippecanoe Ave			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	1	1.5	0.5	1	1	2	1	
7:00 AM	0	3	0	0	0	2	1	0	0	0	0	0	6
7:15 AM	1	2	0	0	0	2	0	0	2	0	0	0	7
7:30 AM	1	2	0	0	6	1	0	0	1	0	0	0	11
7:45 AM	1	5	1	0	2	1	1	1	1	0	0	0	13
8:00 AM	0	3	0	0	4	1	2	0	3	0	0	0	13
8:15 AM	1	5	1	0	2	1	2	0	2	1	0	0	15
8:30 AM	0	1	1	0	6	2	1	0	2	0	0	0	13
8:45 AM	4	3	1	0	7	1	3	0	1	1	0	0	21
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	8	24	4	0	27	11	10	1	12	2	0	0	99
APPROACH %'s :	22.22%	66.67%	11.11%	0.00%	71.05%	28.95%	43.48%	4.35%	52.17%	100.00%	0.00%	0.00%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	3	12	1	0	8	6	2	1	4	0	0	0	37
PEAK HR FACTOR :	0.571			0.500			0.583			0.000			0.871

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	3	0	0
0	0	0	0
0	1	0	0
0	0	0	0
1	1	0	0
0	1	0	0
NB	SB	EB	WB
1	6	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-008

Day: Thursday

City: San Bernardino

2-Axle HT

Date: 10/13/2016

PM

NS/EW Streets:	Tippecanoe Ave			Tippecanoe Ave			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	1	1.5	0.5	1	1	2	1	
4:00 PM	4	4	0	0	9	3	1	0	0	0	1	0	22
4:15 PM	1	3	0	0	10	2	2	0	1	0	0	0	19
4:30 PM	1	0	0	0	3	1	1	0	2	0	0	0	8
4:45 PM	3	1	0	0	1	2	2	0	1	0	0	0	10
5:00 PM	0	3	0	0	1	0	0	0	1	0	0	0	5
5:15 PM	1	2	0	0	3	0	0	0	1	1	0	0	8
5:30 PM	0	0	0	0	3	1	0	0	0	0	0	0	4
5:45 PM	1	0	0	0	1	0	0	0	2	0	0	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	11	13	0	0	31	9	6	0	8	1	1	0	80
APPROACH %'s :	45.83%	54.17%	0.00%	0.00%	77.50%	22.50%	42.86%	0.00%	57.14%	50.00%	50.00%	0.00%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	4	6	0	0	8	3	2	0	3	1	0	0	27
PEAK HR FACTOR :	0.625			0.688			0.417			0.250			0.943

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	1	0	0
0	0	0	0
1	0	0	0
NB	SB	EB	WB
1	2	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-008

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

AM

NS/EW Streets:	Tippecanoe Ave			Tippecanoe Ave			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	1	1.5	0.5	1	1	2	1	
7:00 AM	1	2	0	0	0	0	0	0	2	0	0	0	5
7:15 AM	1	1	0	0	1	0	1	0	0	0	0	0	4
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
7:45 AM	1	1	0	0	1	0	0	0	2	0	0	0	5
8:00 AM	1	1	0	0	1	0	0	0	1	0	0	0	4
8:15 AM	2	0	0	0	3	0	0	0	0	1	0	0	6
8:30 AM	4	2	2	0	3	0	0	0	1	0	0	0	12
8:45 AM	2	3	0	0	1	0	0	0	1	1	1	0	9
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	12	11	2	0	11	0	1	0	7	2	1	0	47
APPROACH %'s :	48.00%	44.00%	8.00%	0.00%	100.00%	0.00%	12.50%	0.00%	87.50%	66.67%	33.33%	0.00%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	3	5	0	0	3	0	1	0	4	0	0	0	16
PEAK HR FACTOR :	0.667			0.750			0.625			0.000			0.871

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	3	0	0
0	0	0	0
0	1	0	0
0	0	0	0
1	1	0	0
0	1	0	0
NB	SB	EB	WB
1	6	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-008

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

PM

NS/EW Streets:	Tippecanoe Ave			Tippecanoe Ave			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	1	1.5	0.5	1	1	2	1	
4:00 PM	3	0	0	0	0	1	0	0	0	0	0	0	4
4:15 PM	1	0	0	0	2	0	1	0	0	0	0	0	4
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	1	0	1	0	0	0	0	0	2
5:30 PM	0	1	0	0	0	0	0	0	1	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	3	0	0	6	1	2	0	2	0	0	0	18
APPROACH %'s :	57.14%	42.86%	0.00%	0.00%	85.71%	14.29%	50.00%	0.00%	50.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	2	0	0	3	0	1	0	1	0	0	0	7
PEAK HR FACTOR :	0.500			0.375			0.500			0.000			0.943

UTURNS

	NB	SB	EB	WB
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	1	0	0
5:15 PM	0	1	0	0
5:30 PM	0	0	0	0
5:45 PM	1	0	0	0
	NB	SB	EB	WB
TOTAL	1	2	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-008

Day: Thursday

City: San Bernardino

4-AxlePlus HT

Date: 10/13/2016

AM

NS/EW Streets:	Tippecanoe Ave			Tippecanoe Ave			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	1	1.5	0.5	1	1	2	1	
7:00 AM	0	4	10	0	3	0	1	0	0	2	3	0	23
7:15 AM	5	2	8	1	3	0	0	7	2	1	1	0	30
7:30 AM	1	2	6	0	3	0	0	6	2	1	0	0	21
7:45 AM	2	0	4	0	6	0	0	5	3	0	0	0	20
8:00 AM	3	0	6	1	0	0	0	3	2	1	0	0	16
8:15 AM	4	3	6	0	2	0	0	1	2	0	1	0	19
8:30 AM	2	0	6	0	2	0	0	2	0	2	1	0	15
8:45 AM	2	4	6	0	0	1	0	1	0	2	1	0	17
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	19	15	52	2	19	1	1	25	11	9	7	0	161
APPROACH %'s :	22.09%	17.44%	60.47%	9.09%	86.36%	4.55%	2.70%	67.57%	29.73%	56.25%	43.75%	0.00%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	8	8	28	1	15	0	1	18	7	4	4	0	94
PEAK HR FACTOR :	0.733			0.667			0.722			0.400			0.871

UTURNS

	NB	SB	EB	WB
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	3	0	0
7:45 AM	0	0	0	0
8:00 AM	0	1	0	0
8:15 AM	0	0	0	0
8:30 AM	1	1	0	0
8:45 AM	0	1	0	0
	NB	SB	EB	WB
	1	6	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-008

Day: Thursday

City: San Bernardino

4-AxlePlus HT

Date: 10/13/2016

PM

NS/EW Streets:	Tippecanoe Ave			Tippecanoe Ave			E Mill St			E Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	1	1.5	0.5	1	1	2	1	
4:00 PM	2	3	4	0	0	1	1	0	1	0	4	0	16
4:15 PM	0	2	2	0	0	2	0	3	0	1	4	0	14
4:30 PM	1	2	0	0	0	3	0	1	1	3	8	1	20
4:45 PM	1	3	0	0	2	0	0	0	0	2	1	0	9
5:00 PM	2	1	2	0	1	0	0	2	3	0	0	0	11
5:15 PM	2	2	0	1	1	0	0	0	0	2	0	0	8
5:30 PM	2	0	2	0	1	0	0	0	1	1	5	0	12
5:45 PM	1	2	0	0	0	0	0	2	0	1	1	0	7
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	11	15	10	1	5	6	1	8	6	10	23	1	97
APPROACH %'s :	30.56%	41.67%	27.78%	8.33%	41.67%	50.00%	6.67%	53.33%	40.00%	29.41%	67.65%	2.94%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	7	6	4	1	5	0	0	2	4	5	6	0	40
PEAK HR FACTOR :	0.850			0.750			0.300			0.458			0.943

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	1	0	0
0	0	0	0
1	0	0	0
NB	SB	EB	WB
1	2	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-104
N/S Street: S E St/Inland Center Dr
E/W Street: W Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

NORTH LEG

AM	NOON	PM
0	0	0

AM	0
NOON	0
PM	0

0	AM
0	NOON
0	PM

WEST LEG

AM	NOON	PM
0	0	0

EAST LEG

AM	NOON	PM
0	0	0

SOUTH LEG

AM	2
NOON	0
PM	3

1	AM
0	NOON
0	PM

0	0	0
AM	NOON	PM

0	0	0
AM	NOON	PM

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-104
N/S Street: S E St/Inland Center Dr
E/W Street: W Mill St
DATE: 10/13/2016
CITY: San Bernardino

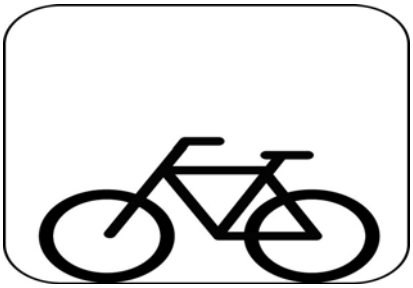
DAY: Thursday

AM	0	0	0
NOON	0	0	0
PM	0	1	0

NORTH LEG

WEST LEG

AM	NOON	PM
0	0	0
0	0	0
0	0	0



EAST LEG

AM	NOON	PM
0	0	0
0	0	0
0	0	0

SOUTH LEG

AM	0	0	0
NOON	0	0	0
PM	0	1	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-6141-104
N/S Street: S E St/Inland Center Dr
E/W Street: W Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	1	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	1	0	0	0	0	0
8:15 AM	0	0	1	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	2	0	0	0	0	0
4:15 PM	0	0	1	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

S E St_Inland Center Dr and W Mill St , San Bernardino

Date: 10/13/2016

Day: Thursday

Project #: 16-6141-104

City: San Bernardino

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach

S E St_Inland Center Dr

Lanes	0.5	2.5	1		
AM	0	31	1	100	AM
NOON	0	0	0	0	NOON
PM	0	57	0	114	PM

Eastbound Approach

W Mill St

Lanes	AM	NOON	PM
	4	0	12
1	0	0	0
1	0	0	0
2	0	0	2

Westbound Approach

Lanes	AM	NOON	PM
0.5	0	0	0
1.5	0	0	0
2	170	0	282
	258	0	274

CONTROL

Signalized

Northbound Approach

AM	201	4	100	257	AM
NOON	0	0	0	0	NOON
PM	341	12	114	274	PM
		2	0	2	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	32	100	AM
	0	0	NOON
	57	114	PM

West Leg	AM	NOON	PM
	4	0	12
	0	0	2

East Leg	AM	NOON	PM
	170	0	282
	258	0	274

South Leg		
AM	201	361
NOON	0	0
PM	341	400

Total Volume Per Leg

North Leg
132 AM
0 NOON
171 PM

West Leg	AM	NOON	PM
	4	0	14

East Leg	AM	NOON	PM
	428	0	556

South Leg	
AM	562
NOON	0
PM	741

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-104

Day: Thursday

City: San Bernardino

Cars

Date: 10/13/2016

AM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
7:00 AM	0	15	48	0	2	0	0	0	1	21	0	0	87
7:15 AM	0	21	47	0	2	0	0	0	0	33	0	0	103
7:30 AM	2	22	60	0	1	0	0	0	0	30	0	0	115
7:45 AM	1	36	91	0	10	0	0	0	0	33	0	0	171
8:00 AM	1	23	66	0	5	0	0	0	0	42	0	0	137
8:15 AM	0	18	42	0	9	0	0	0	0	34	0	0	103
8:30 AM	2	19	49	0	5	0	0	0	0	39	0	0	114
8:45 AM	2	9	37	0	4	0	0	0	0	41	0	0	93
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	8	163	440	0	38	0	0	0	1	273	0	0	923
APPROACH %'s :	1.31%	26.68%	72.01%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	4	96	248	0	29	0	0	0	0	148	0	0	525
PEAK HR FACTOR :	0.680			0.725			0.000			0.881			0.768

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-104

Day: Thursday

City: San Bernardino

Cars

Date: 10/13/2016

PM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
4:00 PM	4	33	62	0	20	0	0	0	3	75	0	0	197
4:15 PM	2	23	66	0	16	0	0	0	0	48	0	0	155
4:30 PM	4	37	65	0	14	0	0	0	1	58	0	0	179
4:45 PM	1	24	65	0	14	0	0	0	1	56	0	0	161
5:00 PM	2	23	65	0	16	0	0	0	0	87	0	0	193
5:15 PM	5	28	69	0	13	0	0	0	0	68	0	0	183
5:30 PM	4	32	51	0	13	0	0	0	4	62	0	0	166
5:45 PM	5	21	76	0	11	0	0	0	5	44	0	0	162
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	27	221	519	0	117	0	0	0	14	498	0	0	1396
APPROACH %'s :	3.52%	28.81%	67.67%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	12	112	264	0	57	0	0	0	2	269	0	0	716
PEAK HR FACTOR :	0.915			0.891			0.500			0.773			0.927

UTURNS			
NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-104 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

2-Axle HT

AM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
7:00 AM	0	1	0	0	0	0	0	0	0	1	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	3	0	0	3
7:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	2
8:00 AM	0	1	0	0	0	0	0	0	0	2	0	0	3
8:15 AM	0	1	0	0	1	0	0	0	0	2	0	0	4
8:30 AM	0	2	0	0	1	0	0	0	0	1	0	0	4
8:45 AM	0	1	1	0	1	0	0	0	0	4	0	0	7
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	6	1	0	3	0	0	0	0	17	0	0	27
APPROACH %'s :	0.00%	85.71%	14.29%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	4	0	0	2	0	0	0	0	7	0	0	13
PEAK HR FACTOR :	0.500			0.500			0.000			0.875			0.768

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-104 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

2-Axle HT

PM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
4:00 PM	0	1	1	0	0	0	0	0	0	1	0	0	3
4:15 PM	0	2	0	0	0	0	0	0	0	1	0	0	3
4:30 PM	0	1	2	0	0	0	0	0	0	1	0	0	4
4:45 PM	0	0	1	0	0	0	0	0	0	1	0	0	2
5:00 PM	0	1	2	0	0	0	0	0	0	1	0	0	4
5:15 PM	0	0	1	0	0	0	0	0	0	3	0	0	4
5:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	1	0	0	0	0	0	0	0	1	0	0	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	6	9	0	0	0	0	0	0	9	0	0	24
APPROACH %'s :	0.00%	40.00%	60.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	2	6	0	0	0	0	0	0	6	0	0	14
PEAK HR FACTOR :	0.667			0.000			0.000			0.500			0.927

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-104

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

AM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	0	2	0	0	3
7:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	2	0	0	0	0	0	0	1	0	0	3
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	4	0	0	0	0	0	0	6	0	0	11
APPROACH %'s :	0.00%	20.00%	80.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	3	0	0	0	0	0	0	2	0	0	5
PEAK HR FACTOR :	0.375			0.000			0.000			0.500			0.768

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-104 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

3-Axle HT

PM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
4:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	1	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	1	0	0	0	0	0	0	5	0	0	7
APPROACH %'s :	0.00%	50.00%	50.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	1
PEAK HR FACTOR :	0.000			0.000			0.000			0.250			0.927

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-104 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

4-AxlePlus HT

AM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
7:00 AM	0	0	1	0	0	0	0	0	0	3	0	0	4
7:15 AM	0	0	0	0	0	0	0	0	0	3	0	0	3
7:30 AM	0	0	2	0	0	0	0	0	0	1	0	0	3
7:45 AM	0	0	1	0	0	0	0	0	0	3	0	0	4
8:00 AM	0	0	0	0	0	0	0	0	0	5	0	0	5
8:15 AM	0	0	1	1	0	0	0	0	0	1	0	0	3
8:30 AM	0	0	4	0	0	0	0	0	0	4	0	0	8
8:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	9	1	0	0	0	0	0	22	0	0	32
APPROACH %'s :	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	6	1	0	0	0	0	0	13	0	0	20
PEAK HR FACTOR :	0.375			0.250			0.000			0.650			0.768

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-104 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

4-AxlePlus HT

PM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
4:00 PM	0	1	3	0	0	0	0	0	0	2	0	0	6
4:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	2
4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	1	0	0	0	0	0	0	1	0	0	2
5:00 PM	0	0	1	0	0	0	0	0	0	4	0	0	5
5:15 PM	0	0	1	0	0	0	0	0	0	1	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	3
5:45 PM	0	0	4	0	0	0	0	0	0	1	0	0	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	11	0	0	0	0	0	0	14	0	0	26
APPROACH %'s :	0.00%	8.33%	91.67%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	4	0	0	0	0	0	0	6	0	0	10
PEAK HR FACTOR :	1.000			0.000			0.000			0.375			0.927

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Pedestrian Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-204
N/S Street: S E St/Inland Center Dr
E/W Street: W Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

AM	0
NOON	0
PM	0

0	AM
0	NOON
0	PM

AM	NOON	PM
0	0	0

NORTH LEG

AM	NOON	PM
0	0	0

WEST LEG

EAST LEG

0	0	0
AM	NOON	PM

SOUTH LEG

0	0	0
AM	NOON	PM

AM	0
NOON	0
PM	0

0	AM
0	NOON
0	PM

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

Bicycle Count Peak Hour

	Start:	End:
AM	7:00	9:00
NOON		
PM	16:00	18:00

PROJECT#: 16-6141-204
N/S Street: S E St/Inland Center Dr
E/W Street: W Mill St
DATE: 10/13/2016
CITY: San Bernardino

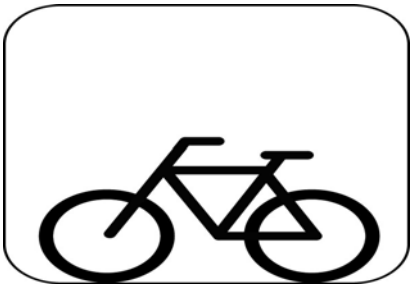
DAY: Thursday

AM	0	0	0
NOON	0	0	0
PM	0	0	0

NORTH LEG

WEST LEG

AM	NOON	PM
0	0	0
0	0	0
0	0	0



EAST LEG

AM	NOON	PM
0	0	0
0	0	0
0	0	0

SOUTH LEG

AM	0	0	0
NOON	0	0	0
PM	0	0	0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-6141-204
N/S Street: S E St/Inland Center Dr
E/W Street: W Mill St
DATE: 10/13/2016 DAY: Thursday
CITY: San Bernardino

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

S E St_Inland Center Dr and W Mill St , San Bernardino

Date: 10/13/2016

Day: Thursday

Project #: 16-6141-204

City: San Bernardino

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (S E St_Inland Center Dr)

	Lanes 0.5	2.5	1		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Eastbound Approach (W Mill St)

	AM	NOON	PM
	11	0	44
1	0	0	0
1	0	0	0
2	0	0	0
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0.5
0	0	0	1.5
0	0	0	2
41	0	89	
AM	NOON	PM	

Northbound Approach

AM	0	11	0	41	AM
NOON	0	0	0	0	NOON
PM	0	44	0	89	PM
		2	0	2	Lanes

CONTROL: Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	0	0	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
11	0	44	0	0	0
0	0	0	41	0	89

	South Leg	
AM	0	52
NOON	0	0
PM	0	133

Total Volume Per Leg

North Leg	
0	AM
0	NOON
0	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
11	0	44	41	0	89

	South Leg
AM	52
NOON	0
PM	133

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-204

Day: Thursday

City: San Bernardino

Cars

Date: 10/13/2016

AM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
7:00 AM	3	0	1	0	0	0	0	0	0	0	0	0	4
7:15 AM	1	0	10	0	0	0	0	0	0	0	0	0	11
7:30 AM	2	0	12	0	0	0	0	0	0	0	0	0	14
7:45 AM	3	0	7	0	0	0	0	0	0	0	0	0	10
8:00 AM	5	0	7	0	0	0	0	0	0	0	0	0	12
8:15 AM	1	0	6	0	0	0	0	0	0	0	0	0	7
8:30 AM	2	0	10	0	0	0	0	0	0	0	0	0	12
8:45 AM	3	0	15	0	0	0	0	0	0	0	0	0	18
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	20	0	68	0	0	0	0	0	0	0	0	0	88
APPROACH %'s :	22.73%	0.00%	77.27%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	11	0	38	0	0	0	0	0	0	0	0	0	49
PEAK HR FACTOR :	0.681			0.000			0.000			0.000			0.681

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-204

Day: Thursday

City: San Bernardino

Cars

Date: 10/13/2016

PM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
4:00 PM	9	0	17	0	0	0	0	0	0	0	0	0	26
4:15 PM	6	0	15	0	0	0	0	0	0	0	0	0	21
4:30 PM	4	0	16	0	0	0	0	0	0	0	0	0	20
4:45 PM	7	0	20	0	0	0	0	0	0	0	0	0	27
5:00 PM	9	0	17	0	0	0	0	0	0	0	0	0	26
5:15 PM	13	0	21	0	0	0	0	0	0	0	0	0	34
5:30 PM	8	0	29	0	0	0	0	0	0	0	0	0	37
5:45 PM	14	0	22	0	0	0	0	0	0	0	0	0	36
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	70	0	157	0	0	0	0	0	0	0	0	0	227
APPROACH %'s :	30.84%	0.00%	69.16%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	44	0	89	0	0	0	0	0	0	0	0	0	133
PEAK HR FACTOR :	0.899			0.000			0.000			0.000			0.899

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-204

Day: Thursday

City: San Bernardino

2-Axle HT

Date: 10/13/2016

AM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
7:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	2	0	0	0	0	0	0	0	0	0	2
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	0	4	0	0	0	0	0	0	0	0	0	5
APPROACH %'s :	20.00%	0.00%	80.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	0	3	0	0	0	0	0	0	0	0	0	3
PEAK HR FACTOR :	0.375			0.000			0.000			0.000			0.681

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-204 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

2-Axle HT

PM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	3	0	0	0	0	0	0	0	0	0	3
APPROACH %'s :	0.00%	0.00%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000			0.000			0.000			0.000			0.899

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-204

Day: Thursday

3-Axle HT

City: San Bernardino

Date: 10/13/2016

AM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
7:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :	100.00%	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000			0.000			0.000			0.000			0.681

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-204 | **Day:** Thursday

3-Axle HT

City: San Bernardino | **Date:** 10/13/2016

PM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000			0.000			0.000			0.000			0.899

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-204 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

4-AxlePlus HT

AM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000			0.000			0.000			0.000			0.681

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6141-204 | **Day:** Thursday

City: San Bernardino | **Date:** 10/13/2016

4-AxlePlus HT

PM

NS/EW Streets:	S E St_Inland Center Dr			S E St_Inland Center Dr			W Mill St			W Mill St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	2	1	2.5	0.5	1	1	2	2	1.5	0.5	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000			0.000			0.000			0.000			0.899

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

APPENDIX B:
VOLUME DEVELOPMENT WORKSHEETS

Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
1 . I-215 SB/Inland Ctr Dr												
NBL	0	0	0	0	0	0	1	0	0	0	0	1
NBT	327	1	0	1	5	332	432	0	0	0	0	432
NBR	233	3	1	2	15	248	233	0	0	1	3	236
SBL	106	10	0	12	56	162	359	2	3	6	30	389
SBT	431	7	2	2	25	456	528	3	0	0	6	534
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	144	2	0	1	7	151	210	2	0	0	4	214
EBT	252	11	2	7	48	300	301	4	4	3	27	328
EBR	256	0	0	3	9	265	283	1	0	1	5	288
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	537	17	2	14	81	618	887	5	3	6	36	923
Departure	471	3	0	2	12	483	642	2	0	0	4	646
Total	1,008	20	2	16	93	1,101	1,529	7	3	6	40	1,569
South Leg												
Approach	560	4	1	3	20	580	666	0	0	1	3	669
Departure	687	7	2	5	34	721	811	4	0	1	11	822
Total	1,247	11	3	8	54	1,301	1,477	4	0	2	14	1,491
East Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	591	24	3	21	119	710	893	6	7	10	60	953
Total	591	24	3	21	119	710	893	6	7	10	60	953
West Leg												
Approach	652	13	2	11	64	716	794	7	4	4	36	830
Departure	0	0	0	0	0	0	1	0	0	0	0	1
Total	652	13	2	11	64	716	795	7	4	4	36	831
Total Approaches												
Approach	1,749	34	5	28	165	1,914	2,347	12	7	11	75	2,422
Departure	1,749	34	5	28	165	1,914	2,347	12	7	11	75	2,422
Total	3,498	68	10	56	330	3,828	4,694	24	14	22	150	4,844

Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
2 . I-215 NB/Inland Ctr Dr												
NBL	172	2	0	1	7	179	214	0	0	0	0	214
NBT	308	4	0	2	14	322	428	2	0	0	4	432
NBR	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	205	15	2	13	74	279	614	3	3	6	32	646
SBR	22	0	0	0	0	22	187	2	0	0	4	191
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	346	2	2	1	12	358	267	2	0	0	4	271
WBT	242	4	2	3	22	264	270	7	1	1	20	290
WBR	418	4	4	6	36	454	299	4	2	8	37	336
North Leg												
Approach	227	15	2	13	74	301	801	5	3	6	36	837
Departure	726	8	4	8	50	776	727	6	2	8	41	768
Total	953	23	6	21	124	1,077	1,528	11	5	14	77	1,605
South Leg												
Approach	480	6	0	3	21	501	642	2	0	0	4	646
Departure	551	17	4	14	86	637	881	5	3	6	36	917
Total	1,031	23	4	17	107	1,138	1,523	7	3	6	40	1,563
East Leg												
Approach	1,006	10	8	10	70	1,076	836	13	3	9	61	897
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,006	10	8	10	70	1,076	836	13	3	9	61	897
West Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	436	6	2	4	29	465	671	9	1	1	24	695
Total	436	6	2	4	29	465	671	9	1	1	24	695
Total Approaches												
Approach	1,713	31	10	26	165	1,878	2,279	20	6	15	101	2,380
Departure	1,713	31	10	26	165	1,878	2,279	20	6	15	101	2,380
Total	3,426	62	20	52	330	3,756	4,558	40	12	30	202	4,760

Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
3 . I-215 NB and W Mill St												
NBL	182	2	0	2	10	192	228	4	0	1	11	239
NBT	2	0	0	0	0	2	5	0	0	0	0	5
NBR	72	1	0	2	8	80	65	2	1	1	10	75
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	416	7	3	1	25	441	513	6	0	1	15	528
EBT	650	18	3	20	104	754	665	5	3	9	45	710
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	281	18	2	2	47	328	552	5	1	2	19	571
WBR	125	7	0	7	35	160	417	1	0	12	38	455
North Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	543	14	3	8	60	603	935	7	0	13	53	988
Total	543	14	3	8	60	603	935	7	0	13	53	988
South Leg												
Approach	256	3	0	4	18	274	298	6	1	2	21	319
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	256	3	0	4	18	274	298	6	1	2	21	319
East Leg												
Approach	406	25	2	9	82	488	969	6	1	14	57	1,026
Departure	722	19	3	22	112	834	730	7	4	10	55	785
Total	1,128	44	5	31	194	1,322	1,699	13	5	24	112	1,811
West Leg												
Approach	1,066	25	6	21	129	1,195	1,178	11	3	10	60	1,238
Departure	463	20	2	4	57	520	780	9	1	3	30	810
Total	1,529	45	8	25	186	1,715	1,958	20	4	13	90	2,048
Total Approaches												
Approach	1,728	53	8	34	229	1,957	2,445	23	5	26	138	2,583
Departure	1,728	53	8	34	229	1,957	2,445	23	5	26	138	2,583
Total	3,456	106	16	68	458	3,914	4,890	46	10	52	276	5,166

Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
4 . S E Street/ Inland Center Dr/ W Mill St												
NBHL	11	0	0	0	0	11	44	0	0	0	0	44
NBL	35	7	0	0	14	49	210	0	0	0	0	210
NBT	94	9	0	0	18	112	241	7	0	0	14	255
NBR	53	5	1	0	13	66	113	1	0	0	2	115
SBL	34	0	1	0	3	37	27	0	0	0	0	27
SBT	110	9	1	0	21	131	189	9	0	0	18	207
SBR	23	2	0	0	4	27	51	0	0	0	0	51
SBBR	29	2	0	0	4	33	57	0	0	0	0	57
EBL	57	1	0	0	2	59	61	1	0	0	2	63
EBT	445	11	3	19	87	532	393	7	4	9	51	444
EBR	54	2	0	0	4	58	65	1	0	0	2	67
EBHR	0	0	0	0	0	0	2	0	0	0	0	2
WBL	47	3	1	1	12	59	93	4	0	1	11	104
WBBL	148	7	2	13	58	206	269	6	1	6	33	302
WBT	347	11	2	9	54	401	524	4	1	14	53	577
WBR	13	0	0	0	0	13	15	0	0	0	0	15
NEHL	4	0	0	0	0	4	12	0	0	0	0	12
NEBL	96	4	0	0	8	104	112	2	0	0	4	116
NEBR	248	0	3	6	26	274	264	6	0	4	24	288
NEHR	38	3	0	0	6	44	89	0	0	0	0	89
North Leg												
Approach	196	13	2	0	31	227	324	9	0	0	18	342
Departure	260	14	0	0	28	288	429	10	0	0	20	449
Total	456	27	2	0	59	515	753	19	0	0	38	791
South Leg												
Approach	193	21	1	0	45	238	608	8	0	0	16	624
Departure	249	17	2	1	42	291	436	14	0	1	31	467
Total	442	38	3	1	87	529	1,044	22	0	1	47	1,091
East Leg												
Approach	555	21	5	23	124	679	901	14	2	21	96	997
Departure	780	16	8	25	127	907	797	14	4	13	77	874
Total	1,335	37	13	48	251	1,586	1,698	28	6	34	173	1,871
West Leg												
Approach	556	14	3	19	93	649	521	9	4	9	55	576
Departure	409	20	2	9	72	481	797	4	1	14	53	850
Total	965	34	5	28	165	1,130	1,318	13	5	23	108	1,426
Southwest Leg												
Approach	386	7	3	6	40	426	477	8	0	4	28	505
Departure	188	9	2	13	62	250	372	6	1	6	33	405
Total	574	16	5	19	102	676	849	14	1	10	61	910
Total Approaches												
Approach	1,886	76	14	48	331	2,217	2,831	48	6	34	213	3,044
Departure	1,886	76	14	48	331	2,217	2,831	48	6	34	213	3,044
Total	3,772	152	28	96	662	4,434	5,662	96	12	68	426	6,088

Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
5 . S Arrowhead Av/W Mill St												
NBL	61	3	0	0	6	67	134	0	1	2	9	143
NBT	134	6	0	2	18	152	258	3	1	0	9	267
NBR	48	1	0	0	2	50	69	1	0	0	2	71
SBL	36	1	0	0	2	38	36	0	0	0	0	36
SBT	159	3	2	0	11	170	249	6	2	0	17	266
SBR	35	2	0	0	4	39	62	2	0	0	4	66
EBL	53	3	0	0	6	59	58	1	0	1	5	63
EBT	618	12	7	21	105	723	630	9	2	12	59	689
EBR	150	3	1	4	21	171	100	4	0	1	11	111
WBL	48	5	1	1	16	64	69	1	0	1	5	74
WBT	421	16	3	16	88	509	693	10	1	22	89	782
WBR	25	1	0	0	2	27	39	0	0	0	0	39
North Leg												
Approach	230	6	2	0	17	247	347	8	2	0	21	368
Departure	212	10	0	2	26	238	355	4	1	1	14	369
Total	442	16	2	2	43	485	702	12	3	1	35	737
South Leg												
Approach	243	10	0	2	26	269	461	4	2	2	20	481
Departure	357	11	4	5	48	405	418	11	2	2	33	451
Total	600	21	4	7	74	674	879	15	4	4	53	932
East Leg												
Approach	494	22	4	17	106	600	801	11	1	23	94	895
Departure	702	14	7	21	109	811	735	10	2	12	61	796
Total	1,196	36	11	38	215	1,411	1,536	21	3	35	155	1,691
West Leg												
Approach	821	18	8	25	132	953	788	14	2	14	75	863
Departure	517	21	3	16	98	615	889	12	2	24	102	991
Total	1,338	39	11	41	230	1,568	1,677	26	4	38	177	1,854
Total Approaches												
Approach	1,788	56	14	44	281	2,069	2,397	37	7	39	210	2,607
Departure	1,788	56	14	44	281	2,069	2,397	37	7	39	210	2,607
Total	3,576	112	28	88	562	4,138	4,794	74	14	78	420	5,214

Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
6 . S Waterman Av/E Mill St												
NBL	117	5	2	3	24	141	145	4	1	3	20	165
NBT	457	13	0	4	38	495	649	3	2	2	17	666
NBR	79	4	1	7	32	111	75	0	1	8	27	102
SBL	94	2	1	1	10	104	112	2	0	0	4	116
SBT	535	10	2	2	31	566	687	5	2	0	15	702
SBR	105	1	1	0	5	110	99	0	2	0	5	104
EBL	94	1	3	0	10	104	153	0	1	0	3	156
EBT	402	15	2	16	83	485	395	7	3	8	46	441
EBR	144	5	1	3	22	166	170	2	2	2	15	185
WBL	102	2	1	11	40	142	126	0	1	12	39	165
WBT	279	11	3	10	60	339	441	9	2	19	80	521
WBR	71	3	0	0	6	77	97	1	0	1	5	102
North Leg												
Approach	734	13	4	3	46	780	898	7	4	0	24	922
Departure	622	17	3	4	54	676	899	4	3	3	25	924
Total	1,356	30	7	7	100	1,456	1,797	11	7	3	49	1,846
South Leg												
Approach	653	22	3	14	94	747	869	7	4	13	64	933
Departure	781	17	4	16	93	874	983	7	5	14	69	1,052
Total	1,434	39	7	30	187	1,621	1,852	14	9	27	133	1,985
East Leg												
Approach	452	16	4	21	106	558	664	10	3	32	124	788
Departure	575	21	4	24	125	700	582	9	4	16	77	659
Total	1,027	37	8	45	231	1,258	1,246	19	7	48	201	1,447
West Leg												
Approach	640	21	6	19	115	755	718	9	6	10	64	782
Departure	501	17	6	13	89	590	685	13	5	22	105	790
Total	1,141	38	12	32	204	1,345	1,403	22	11	32	169	1,572
Total Approaches												
Approach	2,479	72	17	57	361	2,840	3,149	33	17	55	276	3,425
Departure	2,479	72	17	57	361	2,840	3,149	33	17	55	276	3,425
Total	4,958	144	34	114	722	5,680	6,298	66	34	110	552	6,850

Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
7 . Lena Road/E Mill St												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0
SBL	46	1	0	2	8	54	86	3	0	1	9	95
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	103	2	2	5	24	127	153	1	0	1	5	158
EBL	148	4	2	1	16	164	101	1	2	2	13	114
EBT	350	10	3	18	82	432	448	9	2	8	47	495
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	275	8	2	12	57	332	362	4	0	19	65	427
WBR	70	0	2	2	11	81	31	0	0	1	3	34
North Leg												
Approach	149	3	2	7	32	181	239	4	0	2	14	253
Departure	218	4	4	3	27	245	132	1	2	3	16	148
Total	367	7	6	10	59	426	371	5	2	5	30	401
South Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
East Leg												
Approach	345	8	4	14	68	413	393	4	0	20	68	461
Departure	396	11	3	20	90	486	534	12	2	9	56	590
Total	741	19	7	34	158	899	927	16	2	29	124	1,051
West Leg												
Approach	498	14	5	19	98	596	549	10	4	10	60	609
Departure	378	10	4	17	81	459	515	5	0	20	70	585
Total	876	24	9	36	179	1,055	1,064	15	4	30	130	1,194
Total Approaches												
Approach	992	25	11	40	198	1,190	1,181	18	4	32	142	1,323
Departure	992	25	11	40	198	1,190	1,181	18	4	32	142	1,323
Total	1,984	50	22	80	396	2,380	2,362	36	8	64	284	2,646

Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
8 . Tippecanoe Av/E Mill St												
NBL	175	3	3	8	38	213	91	4	0	7	29	120
NBT	640	12	5	8	61	701	1,045	6	2	6	35	1,080
NBR	20	1	0	28	86	106	4	0	0	4	12	16
SBL	11	0	0	1	3	14	4	0	0	1	3	7
SBT	844	8	3	15	69	913	888	8	3	5	39	927
SBR	240	6	0	0	12	252	190	3	0	0	6	196
EBL	125	2	1	1	10	135	281	2	1	0	7	288
EBT	18	1	0	18	56	74	2	0	0	2	6	8
EBR	145	4	4	7	39	184	224	3	1	4	21	245
WBL	8	0	0	4	12	20	8	1	0	5	17	25
WBT	5	0	0	4	12	17	6	0	0	6	18	24
WBR	2	0	0	0	0	2	2	0	0	0	0	2
North Leg												
Approach	1,095	14	3	16	84	1,179	1,082	11	3	6	48	1,130
Departure	767	14	6	9	71	838	1,328	8	3	6	42	1,370
Total	1,862	28	9	25	155	2,017	2,410	19	6	12	90	2,500
South Leg												
Approach	835	16	8	44	185	1,020	1,140	10	2	17	76	1,216
Departure	997	12	7	26	120	1,117	1,120	12	4	14	77	1,197
Total	1,832	28	15	70	305	2,137	2,260	22	6	31	153	2,413
East Leg												
Approach	15	0	0	8	24	39	16	1	0	11	35	51
Departure	49	2	0	47	145	194	10	0	0	7	21	31
Total	64	2	0	55	169	233	26	1	0	18	56	82
West Leg												
Approach	288	7	5	26	105	393	507	5	2	6	34	541
Departure	420	9	3	12	62	482	287	7	0	13	53	340
Total	708	16	8	38	167	875	794	12	2	19	87	881
Total Approaches												
Approach	2,233	37	16	94	398	2,631	2,745	27	7	40	193	2,938
Departure	2,233	37	16	94	398	2,631	2,745	27	7	40	193	2,938
Total	4,466	74	32	188	796	5,262	5,490	54	14	80	386	5,876

Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
9 . Lena Road/North Dwy												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
East Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
West Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Total Approaches												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0

Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
10 . Lena Road/Central Dwy												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
East Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
West Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Total Approaches												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0

Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
11 . Lena Road/South Dwy												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
East Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
West Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Total Approaches												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0

Table B-2 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	Existing Without Project	Project Trips	Existing Plus Project	Existing Without Project	Project Trips	Existing Plus Project
1 . I-215 SB Ramps and Inland Center Drive						
NBL	0	0	0	1	0	1
NBT	332	0	332	432	0	432
NBR	248	0	248	236	0	236
SBL	162	11	173	389	25	414
SBT	456	0	456	534	0	534
SBR	0	0	0	0	0	0
EBL	151	0	151	214	0	214
EBT	300	0	300	328	0	328
EBR	265	0	265	288	0	288
WBL	0	0	0	0	0	0
WBT	0	0	0	0	0	0
WBR	0	0	0	0	0	0
North Leg						
Approach	618	11	629	923	25	948
Departure	483	0	483	646	0	646
Total	1,101	11	1,112	1,569	25	1,594
South Leg						
Approach	580	0	580	669	0	669
Departure	721	0	721	822	0	822
Total	1,301	0	1,301	1,491	0	1,491
East Leg						
Approach	0	0	0	0	0	0
Departure	710	11	721	953	25	978
Total	710	11	721	953	25	978
West Leg						
Approach	716	0	716	830	0	830
Departure	0	0	0	1	0	1
Total	716	0	716	831	0	831
Total Approaches						
Approach	1,914	11	1,925	2,422	25	2,447
Departure	1,914	11	1,925	2,422	25	2,447
Total	3,828	22	3,850	4,844	50	4,894

Table B-2 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	Existing Without Project	Project Trips	Existing Plus Project	Existing Without Project	Project Trips	Existing Plus Project
2 I-215 NB Ramps and Inland Center Drive						
NBL	179	0	179	214	0	214
NBT	322	0	322	432	0	432
NBR	0	0	0	0	0	0
SBL	0	0	0	0	0	0
SBT	279	11	290	646	25	671
SBR	22	0	22	191	0	191
EBL	0	0	0	0	0	0
EBT	0	0	0	0	0	0
EBR	0	0	0	0	0	0
WBL	358	0	358	271	0	271
WBT	264	0	264	290	0	290
WBR	454	22	476	336	11	347
North Leg						
Approach	301	11	312	837	25	862
Departure	776	22	798	768	11	779
Total	1,077	33	1,110	1,605	36	1,641
South Leg						
Approach	501	0	501	646	0	646
Departure	637	11	648	917	25	942
Total	1,138	11	1,149	1,563	25	1,588
East Leg						
Approach	1,076	22	1,098	897	11	908
Departure	0	0	0	0	0	0
Total	1,076	22	1,098	897	11	908
West Leg						
Approach	0	0	0	0	0	0
Departure	465	0	465	695	0	695
Total	465	0	465	695	0	695
Total Approaches						
Approach	1,878	33	1,911	2,380	36	2,416
Departure	1,878	33	1,911	2,380	36	2,416
Total	3,756	66	3,822	4,760	72	4,832

Table B-2 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	Existing Without Project	Project Trips	Existing Plus Project	Existing Without Project	Project Trips	Existing Plus Project
3 I-215 NB Ramps and Mill Street						
NBL	192	0	192	239	0	239
NBT	2	0	2	5	0	5
NBR	80	0	80	75	0	75
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	0	0	0	0	0
EBL	441	0	441	528	0	528
EBT	754	17	771	710	8	718
EBR	0	0	0	0	0	0
WBL	0	0	0	0	0	0
WBT	328	0	328	571	0	571
WBR	160	8	168	455	18	473
North Leg						
Approach	0	0	0	0	0	0
Departure	603	8	611	988	18	1,006
Total	603	8	611	988	18	1,006
South Leg						
Approach	274	0	274	319	0	319
Departure	0	0	0	0	0	0
Total	274	0	274	319	0	319
East Leg						
Approach	488	8	496	1,026	18	1,044
Departure	834	17	851	785	8	793
Total	1,322	25	1,347	1,811	26	1,837
West Leg						
Approach	1,195	17	1,212	1,238	8	1,246
Departure	520	0	520	810	0	810
Total	1,715	17	1,732	2,048	8	2,056
Total Approaches						
Approach	1,957	25	1,982	2,583	26	2,609
Departure	1,957	25	1,982	2,583	26	2,609
Total	3,914	50	3,964	5,166	52	5,218

Table B-2 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	Existing Without Project	Project Trips	Existing Plus Project	Existing Without Project	Project Trips	Existing Plus Project
4 . S E Street/ Inland Center Dr/ W Mill St						
NBHL	11	0	11	44	0	44
NBL	49	0	49	210	0	210
NBT	112	0	112	255	0	255
NBR	66	0	66	115	0	115
SBL	37	0	37	27	0	27
SBT	131	0	131	207	0	207
SBR	27	0	27	51	0	51
SBBR	33	0	33	57	0	57
EBL	59	0	59	63	0	63
EBT	532	17	549	444	8	452
EBR	58	0	58	67	0	67
EBHR	0	0	0	2	0	2
WBL	59	0	59	104	0	104
WBBL	206	22	228	302	11	313
WBT	401	8	409	577	18	595
WBR	13	0	13	15	0	15
NEHL	4	0	4	12	0	12
NEBL	104	0	104	116	0	116
NEBR	274	22	296	288	11	299
NEHR	44	0	44	89	0	89
North Leg						
Approach	228	0	228	342	0	342
Departure	288	0	288	449	0	449
Total	516	0	516	791	0	791
South Leg						
Approach	238	0	238	624	0	624
Departure	292	0	292	467	0	467
Total	530	0	530	1,091	0	1,091
East Leg						
Approach	679	30	709	998	29	1,027
Departure	909	39	948	874	19	893
Total	1,588	69	1,657	1,872	48	1,920
West Leg						
Approach	649	17	666	576	8	584
Departure	481	8	489	850	18	868
Total	1,130	25	1,155	1,426	26	1,452
Southwest Leg						
Approach	426	22	448	505	11	516
Departure	250	22	272	405	11	416
Total	676	44	720	910	22	932
Total Approaches						
Approach	2,220	69	2,289	3,045	48	3,093
Departure	2,220	69	2,289	3,045	48	3,093
Total	4,440	138	4,578	6,090	96	6,186

Table B-2 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	Existing Without Project	Project Trips	Existing Plus Project	Existing Without Project	Project Trips	Existing Plus Project
5 S Arrowhead Avenue and W Mill Street						
NBL	67	0	67	143	0	143
NBT	152	0	152	267	0	267
NBR	50	0	50	71	0	71
SBL	38	0	38	36	0	36
SBT	170	0	170	266	0	266
SBR	39	0	39	66	0	66
EBL	59	0	59	63	0	63
EBT	723	39	762	689	18	707
EBR	171	0	171	111	0	111
WBL	64	0	64	74	0	74
WBT	509	18	527	782	43	825
WBR	27	0	27	39	0	39
North Leg						
Approach	247	0	247	368	0	368
Departure	238	0	238	369	0	369
Total	485	0	485	737	0	737
South Leg						
Approach	269	0	269	481	0	481
Departure	405	0	405	451	0	451
Total	674	0	674	932	0	932
East Leg						
Approach	600	18	618	895	43	938
Departure	811	39	850	796	18	814
Total	1,411	57	1,468	1,691	61	1,752
West Leg						
Approach	953	39	992	863	18	881
Departure	615	18	633	991	43	1,034
Total	1,568	57	1,625	1,854	61	1,915
Total Approaches						
Approach	2,069	57	2,126	2,607	61	2,668
Departure	2,069	57	2,126	2,607	61	2,668
Total	4,138	114	4,252	5,214	122	5,336

Table B-2 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	Existing Without Project	Project Trips	Existing Plus Project	Existing Without Project	Project Trips	Existing Plus Project
6 S Waterman Avenue and E Mill Street						
NBL	141	0	141	165	0	165
NBT	495	0	495	666	0	666
NBR	111	3	114	102	2	104
SBL	104	2	106	116	1	117
SBT	566	0	566	702	0	702
SBR	110	0	110	104	0	104
EBL	104	0	104	156	0	156
EBT	485	39	524	441	18	459
EBR	166	0	166	185	0	185
WBL	142	2	144	165	4	169
WBT	339	18	357	521	43	564
WBR	77	1	78	102	2	104
North Leg						
Approach	780	2	782	922	1	923
Departure	676	1	677	924	2	926
Total	1,456	3	1,459	1,846	3	1,849
South Leg						
Approach	747	3	750	933	2	935
Departure	874	2	876	1,052	4	1,056
Total	1,621	5	1,626	1,985	6	1,991
East Leg						
Approach	558	21	579	788	49	837
Departure	700	44	744	659	21	680
Total	1,258	65	1,323	1,447	70	1,517
West Leg						
Approach	755	39	794	782	18	800
Departure	590	18	608	790	43	833
Total	1,345	57	1,402	1,572	61	1,633
Total Approaches						
Approach	2,840	65	2,905	3,425	70	3,495
Departure	2,840	65	2,905	3,425	70	3,495
Total	5,680	130	5,810	6,850	140	6,990

Table B-2 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	Existing Without Project	Project Trips	Existing Plus Project	Existing Without Project	Project Trips	Existing Plus Project
7 Lena Road and E Mill Street						
NBL	0	0	0	0	0	0
NBT	0	0	0	0	0	0
NBR	0	0	0	0	0	0
SBL	54	6	60	95	15	110
SBT	0	0	0	0	0	0
SBR	127	21	148	158	49	207
EBL	164	44	208	114	21	135
EBT	432	0	432	495	0	495
EBR	0	0	0	0	0	0
WBL	0	0	0	0	0	0
WBT	332	0	332	427	0	427
WBR	81	14	95	34	6	40
North Leg						
Approach	181	27	208	253	64	317
Departure	245	58	303	148	27	175
Total	426	85	511	401	91	492
South Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
East Leg						
Approach	413	14	427	461	6	467
Departure	486	6	492	590	15	605
Total	899	20	919	1,051	21	1,072
West Leg						
Approach	596	44	640	609	21	630
Departure	459	21	480	585	49	634
Total	1,055	65	1,120	1,194	70	1,264
Total Approaches						
Approach	1,190	85	1,275	1,323	91	1,414
Departure	1,190	85	1,275	1,323	91	1,414
Total	2,380	170	2,550	2,646	182	2,828

Table B-2 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	Existing Without Project	Project Trips	Existing Plus Project	Existing Without Project	Project Trips	Existing Plus Project
8 Tippecanoe Avenue and E Mill Street						
NBL	213	13	226	120	6	126
NBT	701	0	701	1,080	0	1,080
NBR	106	0	106	16	0	16
SBL	14	0	14	7	0	7
SBT	913	0	913	927	0	927
SBR	252	1	253	196	1	197
EBL	135	1	136	288	1	289
EBT	74	0	74	8	0	8
EBR	184	6	190	245	14	259
WBL	20	0	20	25	0	25
WBT	17	0	17	24	0	24
WBR	2	0	2	2	0	2
North Leg						
Approach	1,179	1	1,180	1,130	1	1,131
Departure	838	1	839	1,370	1	1,371
Total	2,017	2	2,019	2,500	2	2,502
South Leg						
Approach	1,020	13	1,033	1,216	6	1,222
Departure	1,117	6	1,123	1,197	14	1,211
Total	2,137	19	2,156	2,413	20	2,433
East Leg						
Approach	39	0	39	51	0	51
Departure	194	0	194	31	0	31
Total	233	0	233	82	0	82
West Leg						
Approach	393	7	400	541	15	556
Departure	482	14	496	340	7	347
Total	875	21	896	881	22	903
Total Approaches						
Approach	2,631	21	2,652	2,938	22	2,960
Departure	2,631	21	2,652	2,938	22	2,960
Total	5,262	42	5,304	5,876	44	5,920

Table B-2 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	Existing Without Project	Project Trips	Existing Plus Project	Existing Without Project	Project Trips	Existing Plus Project
9 Lena Road and Project North Driveway						
NBL		0	0		0	0
NBT	245	0	245	148	0	148
NBR		20	20		10	10
SBL		1	1		0	0
SBT	181	0	181	253	0	253
SBR		0	0		0	0
EBL		0	0		0	0
EBT		0	0		0	0
EBR		0	0		0	0
WBL		10	10		22	22
WBT		0	0		0	0
WBR		0	0		1	1
North Leg						
Approach	181	1	182	253	0	253
Departure	245	0	245	148	1	149
Total	426	1	427	401	1	402
South Leg						
Approach	245	20	265	148	10	158
Departure	181	10	191	253	22	275
Total	426	30	456	401	32	433
East Leg						
Approach	0	10	10	0	23	23
Departure	0	21	21	0	10	10
Total	0	31	31	0	33	33
West Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
Total Approaches						
Approach	426	31	457	401	33	434
Departure	426	31	457	401	33	434
Total	852	62	914	802	66	868

Table B-2 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	Existing Without Project	Project Trips	Existing Plus Project	Existing Without Project	Project Trips	Existing Plus Project
10 Lena Road and Project Central Driveway						
NBL		0	0		0	0
NBT	245	20	265	148	10	158
NBR		10	10		5	5
SBL		0	0		0	0
SBT	181	10	191	253	22	275
SBR		0	0		0	0
EBL		0	0		0	0
EBT		0	0		0	0
EBR		0	0		0	0
WBL		5	5		11	11
WBT		0	0		0	0
WBR		0	0		0	0
North Leg						
Approach	181	10	191	253	22	275
Departure	245	20	265	148	10	158
Total	426	30	456	401	32	433
South Leg						
Approach	245	30	275	148	15	163
Departure	181	15	196	253	33	286
Total	426	45	471	401	48	449
East Leg						
Approach	0	5	5	0	11	11
Departure	0	10	10	0	5	5
Total	0	15	15	0	16	16
West Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
Total Approaches						
Approach	426	45	471	401	48	449
Departure	426	45	471	401	48	449
Total	852	90	942	802	96	898

Table B-2 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	Existing Without Project	Project Trips	Existing Plus Project	Existing Without Project	Project Trips	Existing Plus Project
11 Lena Road and Project South Driveway						
NBL		0	0		0	0
NBT	245	30	275	148	15	163
NBR		29	29		14	14
SBL		0	0		0	0
SBT	181	14	195	253	33	286
SBR		0	0		0	0
EBL		0	0		0	0
EBT		0	0		0	0
EBR		0	0		0	0
WBL		14	14		32	32
WBT		0	0		0	0
WBR		0	0		0	0
North Leg						
Approach	181	14	195	253	33	286
Departure	245	30	275	148	15	163
Total	426	44	470	401	48	449
South Leg						
Approach	245	59	304	148	29	177
Departure	181	28	209	253	65	318
Total	426	87	513	401	94	495
East Leg						
Approach	0	14	14	0	32	32
Departure	0	29	29	0	14	14
Total	0	43	43	0	46	46
West Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
Total Approaches						
Approach	426	87	513	401	94	495
Departure	426	87	513	401	94	495
Total	852	174	1,026	802	188	990

Table B-3 - Opening Year Base Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project
1 . I-215 SB Ramps and Inland Center Drive										
NBL	0	0	0	0	0	1	0	1	0	1
NBT	332	20	352	0	352	432	26	458	0	458
NBR	248	15	263	0	263	236	14	250	0	250
SBL	162	10	172	11	183	389	23	412	25	437
SBT	456	27	483	0	483	534	32	566	0	566
SBR	0	0	0	0	0	0	0	0	0	0
EBL	151	9	160	0	160	214	13	227	0	227
EBT	300	18	318	0	318	328	20	348	0	348
EBR	265	16	281	0	281	288	17	305	0	305
WBL	0	0	0	0	0	0	0	0	0	0
WBT	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0	0	0
North Leg										
Approach	618	37	655	11	666	923	55	978	25	1,003
Departure	483	29	512	0	512	646	39	685	0	685
Total	1,101	66	1,167	11	1,178	1,569	94	1,663	25	1,688
South Leg										
Approach	580	35	615	0	615	669	40	709	0	709
Departure	721	43	764	0	764	822	49	871	0	871
Total	1,301	78	1,379	0	1,379	1,491	89	1,580	0	1,580
East Leg										
Approach	0	0	0	0	0	0	0	0	0	0
Departure	710	43	753	11	764	953	57	1,010	25	1,035
Total	710	43	753	11	764	953	57	1,010	25	1,035
West Leg										
Approach	716	43	759	0	759	830	50	880	0	880
Departure	0	0	0	0	0	1	0	1	0	1
Total	716	43	759	0	759	831	50	881	0	881
Total Approaches										
Approach	1,914	115	2,029	11	2,040	2,422	145	2,567	25	2,592
Departure	1,914	115	2,029	11	2,040	2,422	145	2,567	25	2,592
Total	3,828	230	4,058	22	4,080	4,844	290	5,134	50	5,184

Table B-3 - Opening Year Base Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project
2 . I-215 NB Ramps and Inland Center Drive										
NBL	179	11	190	0	190	214	13	227	0	227
NBT	322	19	341	0	341	432	26	458	0	458
NBR	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0
SBT	279	17	296	11	307	646	39	685	25	710
SBR	22	1	23	0	23	191	11	202	0	202
EBL	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0
WBL	358	21	379	0	379	271	16	287	0	287
WBT	264	16	280	0	280	290	17	307	0	307
WBR	454	27	481	22	503	336	20	356	11	367
North Leg										
Approach	301	18	319	11	330	837	50	887	25	912
Departure	776	46	822	22	844	768	46	814	11	825
Total	1,077	64	1,141	33	1,174	1,605	96	1,701	36	1,737
South Leg										
Approach	501	30	531	0	531	646	39	685	0	685
Departure	637	38	675	11	686	917	55	972	25	997
Total	1,138	68	1,206	11	1,217	1,563	94	1,657	25	1,682
East Leg										
Approach	1,076	64	1,140	22	1,162	897	53	950	11	961
Departure	0	0	0	0	0	0	0	0	0	0
Total	1,076	64	1,140	22	1,162	897	53	950	11	961
West Leg										
Approach	0	0	0	0	0	0	0	0	0	0
Departure	465	28	493	0	493	695	41	736	0	736
Total	465	28	493	0	493	695	41	736	0	736
Total Approaches										
Approach	1,878	112	1,990	33	2,023	2,380	142	2,522	36	2,558
Departure	1,878	112	1,990	33	2,023	2,380	142	2,522	36	2,558
Total	3,756	224	3,980	66	4,046	4,760	284	5,044	72	5,116

Table B-3 - Opening Year Base Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project
3 . I-215 NB Ramps and Mill Street										
NBL	192	12	204	0	204	239	14	253	0	253
NBT	2	0	2	0	2	5	0	5	0	5
NBR	80	5	85	0	85	75	5	80	0	80
SBL	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0
EBL	441	26	467	0	467	528	32	560	0	560
EBT	754	45	799	17	816	710	43	753	8	761
EBR	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0
WBT	328	20	348	0	348	571	34	605	0	605
WBR	160	10	170	8	178	455	27	482	18	500
North Leg										
Approach	0	0	0	0	0	0	0	0	0	0
Departure	603	36	639	8	647	988	59	1,047	18	1,065
Total	603	36	639	8	647	988	59	1,047	18	1,065
South Leg										
Approach	274	17	291	0	291	319	19	338	0	338
Departure	0	0	0	0	0	0	0	0	0	0
Total	274	17	291	0	291	319	19	338	0	338
East Leg										
Approach	488	30	518	8	526	1,026	61	1,087	18	1,105
Departure	834	50	884	17	901	785	48	833	8	841
Total	1,322	80	1,402	25	1,427	1,811	109	1,920	26	1,946
West Leg										
Approach	1,195	71	1,266	17	1,283	1,238	75	1,313	8	1,321
Departure	520	32	552	0	552	810	48	858	0	858
Total	1,715	103	1,818	17	1,835	2,048	123	2,171	8	2,179
Total Approaches										
Approach	1,957	118	2,075	25	2,100	2,583	155	2,738	26	2,764
Departure	1,957	118	2,075	25	2,100	2,583	155	2,738	26	2,764
Total	3,914	236	4,150	50	4,200	5,166	310	5,476	52	5,528

Table B-3 - Opening Year Base Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project
4 . S E Street/ Inland Center Dr/ W Mill St										
NBHL	11	1	12	0	12	44	3	47	0	47
NBL	49	3	52	0	52	210	13	223	0	223
NBT	112	7	119	0	119	255	15	270	0	270
NBR	66	4	70	0	70	115	7	122	0	122
SBL	37	2	39	0	39	27	2	29	0	29
SBT	131	8	139	0	139	207	12	219	0	219
SBR	27	2	29	0	29	51	3	54	0	54
SBBR	33	2	35	0	35	57	3	60	0	60
EBL	59	4	63	0	63	63	4	67	0	67
EBT	532	32	564	17	581	444	27	471	8	479
EBR	58	3	61	0	61	67	4	71	0	71
EBHR	0	0	0	0	0	2	0	2	0	2
WBL	59	4	63	0	63	104	6	110	0	110
WBBL	206	12	218	22	240	302	18	320	11	331
WBT	401	24	425	8	433	577	35	612	18	630
WBR	13	1	14	0	14	15	1	16	0	16
NEHL	4	0	4	0	4	12	1	13	0	13
NEBL	104	6	110	0	110	116	7	123	0	123
NEBR	274	16	290	22	312	288	17	305	11	316
NEHR	44	3	47	0	47	89	5	94	0	94
North Leg										
Approach	228	14	242	0	242	342	20	362	0	362
Departure	288	18	306	0	306	449	27	476	0	476
Total	516	32	548	0	548	791	47	838	0	838
South Leg										
Approach	238	15	253	0	253	624	38	662	0	662
Departure	292	18	310	0	310	467	27	494	0	494
Total	530	33	563	0	563	1,091	65	1,156	0	1,156
East Leg										
Approach	679	41	720	30	750	998	60	1,058	29	1,087
Departure	909	54	963	39	1,002	874	53	927	19	946
Total	1,588	95	1,683	69	1,752	1,872	113	1,985	48	2,033
West Leg										
Approach	649	39	688	17	705	576	35	611	8	619
Departure	481	29	510	8	518	850	52	902	18	920
Total	1,130	68	1,198	25	1,223	1,426	87	1,513	26	1,539
Southwest Leg										
Approach	426	25	451	22	473	505	30	535	11	546
Departure	250	15	265	22	287	405	24	429	11	440
Total	676	40	716	44	760	910	54	964	22	986
Total Approaches										
Approach	2,220	134	2,354	69	2,423	3,045	183	3,228	48	3,276
Departure	2,220	134	2,354	69	2,423	3,045	183	3,228	48	3,276
Total	4,440	268	4,708	138	4,846	6,090	366	6,456	96	6,552

Table B-3 - Opening Year Base Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project
5 . S Arrowhead Avenue and W Mill Street										
NBL	67	4	71	0	71	143	9	152	0	152
NBT	152	9	161	0	161	267	16	283	0	283
NBR	50	3	53	0	53	71	4	75	0	75
SBL	38	2	40	0	40	36	2	38	0	38
SBT	170	10	180	0	180	266	16	282	0	282
SBR	39	2	41	0	41	66	4	70	0	70
EBL	59	4	63	0	63	63	4	67	0	67
EBT	723	43	766	39	805	689	41	730	18	748
EBR	171	10	181	0	181	111	7	118	0	118
WBL	64	4	68	0	68	74	4	78	0	78
WBT	509	31	540	18	558	782	47	829	43	872
WBR	27	2	29	0	29	39	2	41	0	41
North Leg										
Approach	247	14	261	0	261	368	22	390	0	390
Departure	238	15	253	0	253	369	22	391	0	391
Total	485	29	514	0	514	737	44	781	0	781
South Leg										
Approach	269	16	285	0	285	481	29	510	0	510
Departure	405	24	429	0	429	451	27	478	0	478
Total	674	40	714	0	714	932	56	988	0	988
East Leg										
Approach	600	37	637	18	655	895	53	948	43	991
Departure	811	48	859	39	898	796	47	843	18	861
Total	1,411	85	1,496	57	1,553	1,691	100	1,791	61	1,852
West Leg										
Approach	953	57	1,010	39	1,049	863	52	915	18	933
Departure	615	37	652	18	670	991	60	1,051	43	1,094
Total	1,568	94	1,662	57	1,719	1,854	112	1,966	61	2,027
Total Approaches										
Approach	2,069	124	2,193	57	2,250	2,607	156	2,763	61	2,824
Departure	2,069	124	2,193	57	2,250	2,607	156	2,763	61	2,824
Total	4,138	248	4,386	114	4,500	5,214	312	5,526	122	5,648

Table B-3 - Opening Year Base Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project
6 . S Waterman Avenue and E Mill Street										
NBL	141	8	149	0	149	165	10	175	0	175
NBT	495	30	525	0	525	666	40	706	0	706
NBR	111	7	118	3	121	102	6	108	2	110
SBL	104	6	110	2	112	116	7	123	1	124
SBT	566	34	600	0	600	702	42	744	0	744
SBR	110	7	117	0	117	104	6	110	0	110
EBL	104	6	110	0	110	156	9	165	0	165
EBT	485	29	514	39	553	441	26	467	18	485
EBR	166	10	176	0	176	185	11	196	0	196
WBL	142	9	151	2	153	165	10	175	4	179
WBT	339	20	359	18	377	521	31	552	43	595
WBR	77	5	82	1	83	102	6	108	2	110
North Leg										
Approach	780	47	827	2	829	922	55	977	1	978
Departure	676	41	717	1	718	924	55	979	2	981
Total	1,456	88	1,544	3	1,547	1,846	110	1,956	3	1,959
South Leg										
Approach	747	45	792	3	795	933	56	989	2	991
Departure	874	53	927	2	929	1,052	63	1,115	4	1,119
Total	1,621	98	1,719	5	1,724	1,985	119	2,104	6	2,110
East Leg										
Approach	558	34	592	21	613	788	47	835	49	884
Departure	700	42	742	44	786	659	39	698	21	719
Total	1,258	76	1,334	65	1,399	1,447	86	1,533	70	1,603
West Leg										
Approach	755	45	800	39	839	782	46	828	18	846
Departure	590	35	625	18	643	790	47	837	43	880
Total	1,345	80	1,425	57	1,482	1,572	93	1,665	61	1,726
Total Approaches										
Approach	2,840	171	3,011	65	3,076	3,425	204	3,629	70	3,699
Departure	2,840	171	3,011	65	3,076	3,425	204	3,629	70	3,699
Total	5,680	342	6,022	130	6,152	6,850	408	7,258	140	7,398

Table B-3 - Opening Year Base Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project
7 . Lena Road and E Mill Street										
NBL	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0
SBL	54	3	57	6	63	95	6	101	15	116
SBT	0	0	0	0	0	0	0	0	0	0
SBR	127	8	135	21	156	158	9	167	49	216
EBL	164	10	174	44	218	114	7	121	21	142
EBT	700	42	742	0	742	659	40	699	0	699
EBR	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0
WBT	558	33	591	0	591	788	47	835	0	835
WBR	81	5	86	14	100	34	2	36	6	42
North Leg										
Approach	181	11	192	27	219	253	15	268	64	332
Departure	245	15	260	58	318	148	9	157	27	184
Total	426	26	452	85	537	401	24	425	91	516
South Leg										
Approach	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
East Leg										
Approach	639	38	677	14	691	822	49	871	6	877
Departure	754	45	799	6	805	754	46	800	15	815
Total	1,393	83	1,476	20	1,496	1,576	95	1,671	21	1,692
West Leg										
Approach	864	52	916	44	960	773	47	820	21	841
Departure	685	41	726	21	747	946	56	1,002	49	1,051
Total	1,549	93	1,642	65	1,707	1,719	103	1,822	70	1,892
Total Approaches										
Approach	1,684	101	1,785	85	1,870	1,848	111	1,959	91	2,050
Departure	1,684	101	1,785	85	1,870	1,848	111	1,959	91	2,050
Total	3,368	202	3,570	170	3,740	3,696	222	3,918	182	4,100

Table B-3 - Opening Year Base Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project
8 . Tippecanoe Avenue and E Mill Street										
NBL	213	13	226	13	239	120	7	127	6	133
NBT	701	42	743	0	743	1,080	65	1,145	0	1,145
NBR	106	6	112	0	112	16	1	17	0	17
SBL	14	1	15	0	15	7	0	7	0	7
SBT	913	55	968	0	968	927	56	983	0	983
SBR	252	15	267	1	268	196	12	208	1	209
EBL	135	8	143	1	144	288	17	305	1	306
EBT	74	4	78	0	78	8	0	8	0	8
EBR	184	11	195	6	201	245	15	260	14	274
WBL	20	1	21	0	21	25	2	27	0	27
WBT	17	1	18	0	18	24	1	25	0	25
WBR	2	0	2	0	2	2	0	2	0	2
North Leg										
Approach	1,179	71	1,250	1	1,251	1,130	68	1,198	1	1,199
Departure	838	50	888	1	889	1,370	82	1,452	1	1,453
Total	2,017	121	2,138	2	2,140	2,500	150	2,650	2	2,652
South Leg										
Approach	1,020	61	1,081	13	1,094	1,216	73	1,289	6	1,295
Departure	1,117	67	1,184	6	1,190	1,197	73	1,270	14	1,284
Total	2,137	128	2,265	19	2,284	2,413	146	2,559	20	2,579
East Leg										
Approach	39	2	41	0	41	51	3	54	0	54
Departure	194	11	205	0	205	31	1	32	0	32
Total	233	13	246	0	246	82	4	86	0	86
West Leg										
Approach	393	23	416	7	423	541	32	573	15	588
Departure	482	29	511	14	525	340	20	360	7	367
Total	875	52	927	21	948	881	52	933	22	955
Total Approaches										
Approach	2,631	157	2,788	21	2,809	2,938	176	3,114	22	3,136
Departure	2,631	157	2,788	21	2,809	2,938	176	3,114	22	3,136
Total	5,262	314	5,576	42	5,618	5,876	352	6,228	44	6,272

Table B-3 - Opening Year Base Peak Hour PCE Volume Summary

		AM Peak Hour					PM Peak Hour				
		Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project
9	Lena Road/North Dwy										
	NBL	0	0	0	0	0	0	0	0	0	0
	NBT	245	15	260	0	260	148	9	157	0	157
	NBR	0	0	0	20	20	0	0	0	10	10
	SBL	0	0	0	1	1	0	0	0	0	0
	SBT	181	11	192	0	192	253	15	268	0	268
	SBR	0	0	0	0	0	0	0	0	0	0
	EBL	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	10	10	0	0	0	22	22
	WBT	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	1	1
	North Leg										
	Approach	181	11	192	1	193	253	15	268	0	268
	Departure	245	15	260	0	260	148	9	157	1	158
	Total	426	26	452	1	453	401	24	425	1	426
	South Leg										
	Approach	245	15	260	20	280	148	9	157	10	167
	Departure	181	11	192	10	202	253	15	268	22	290
	Total	426	26	452	30	482	401	24	425	32	457
	East Leg										
	Approach	0	0	0	10	10	0	0	0	23	23
	Departure	0	0	0	21	21	0	0	0	10	10
	Total	0	0	0	31	31	0	0	0	33	33
	West Leg										
	Approach	0	0	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0
	Total Approaches										
	Approach	426	26	452	31	483	401	24	425	33	458
	Departure	426	26	452	31	483	401	24	425	33	458
	Total	852	52	904	62	966	802	48	850	66	916

Table B-3 - Opening Year Base Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project
10 . Lena Road and Project Central Driveway										
NBL	0	0	0	0	0	0	0	0	0	0
NBT	245	15	260	20	280	148	9	157	10	167
NBR	0	0	0	10	10	0	0	0	5	5
SBL	0	0	0	0	0	0	0	0	0	0
SBT	181	11	192	10	202	253	15	268	22	290
SBR	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	5	5	0	0	0	11	11
WBT	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0	0	0
North Leg										
Approach	181	11	192	10	202	253	15	268	22	290
Departure	245	15	260	20	280	148	9	157	10	167
Total	426	26	452	30	482	401	24	425	32	457
South Leg										
Approach	245	15	260	30	290	148	9	157	15	172
Departure	181	11	192	15	207	253	15	268	33	301
Total	426	26	452	45	497	401	24	425	48	473
East Leg										
Approach	0	0	0	5	5	0	0	0	11	11
Departure	0	0	0	10	10	0	0	0	5	5
Total	0	0	0	15	15	0	0	0	16	16
West Leg										
Approach	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Total Approaches										
Approach	426	26	452	45	497	401	24	425	48	473
Departure	426	26	452	45	497	401	24	425	48	473
Total	852	52	904	90	994	802	48	850	96	946

Table B-3 - Opening Year Base Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project	Yr. 2016 W/O Proj Volumes	2016 to 2018 Growth	2018 Opening Yr. Base	Project Trips	2018 Opening Yr. Base + Project
11 . Lena Road and Project South Driveway										
NBL	0	0	0	0	0	0	0	0	0	0
NBT	245	15	260	30	290	148	9	157	15	172
NBR	0	0	0	29	29	0	0	0	14	14
SBL	0	0	0	0	0	0	0	0	0	0
SBT	181	11	192	14	206	253	15	268	33	301
SBR	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	14	14	0	0	0	32	32
WBT	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0	0	0
North Leg										
Approach	181	11	192	14	206	253	15	268	33	301
Departure	245	15	260	30	290	148	9	157	15	172
Total	426	26	452	44	496	401	24	425	48	473
South Leg										
Approach	245	15	260	59	319	148	9	157	29	186
Departure	181	11	192	28	220	253	15	268	65	333
Total	426	26	452	87	539	401	24	425	94	519
East Leg										
Approach	0	0	0	14	14	0	0	0	32	32
Departure	0	0	0	29	29	0	0	0	14	14
Total	0	0	0	43	43	0	0	0	46	46
West Leg										
Approach	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Total Approaches										
Approach	426	26	452	87	539	401	24	425	94	519
Departure	426	26	452	87	539	401	24	425	94	519
Total	852	52	904	174	1,078	802	48	850	188	1,038

Appendix B-4 - Cumulative Projects

TAZ	Project #	File Name	Address (Project Name)	Project Summary
TAZ 1	22	DP-D16-15	700 S. I Street	A request to allow the development of a warehouse approx. 2800sqft
TAZ 2	23	DP-P15-04	895 S. Inland Center Drive	Develop, establish and operate and industrial building approx. 14,857sqft
TAZ 3	4	TPM 19534 DPD-14-16	250 S. "G" Street (Loma Linda University)	Tentative Parcel Map and Development Permit to construct a 3-story, 150,000 square foot medical and educational facility
TAZ 3	7	CUP15-07	655 W. 2nd Street (Hardy Brown K-8 School)	Proposed Hardy Brown School to house students in primary learning grades K - 8 (300 Students)
TAZ 4	1	CUP11-13, TTM 18829 and DA12-02	Waterman Gardens 610 E. Olive Street	Construct an affordable/mixed income community: 74-unit senior housing project, 337 multi-family units, 38 condo units, 45,000-sq ft. recreational facility, a 58,200-sq ft. community center, and a 7,400-square foot administration/multi-purpose building. Approval of a Development Agreement.
TAZ 4	5	CUP14-20	766 N. Waterman Avenue	Renovate existing building and construct a newmulti use building and outdoor recreational space for a holistic learning and cultural resource center "El Sol Holistic Campus"
TAZ 4	9	CUP15-14	NE corner of 5th Street & Waterman Avenue	5,542 sq. ft. convenience store/donut shop w/ drive- thru, and gas station. Related application: THR15-128.
TAZ 4	10	CUP16-09	165 E. Mill Street	A request to allow the establishment and operation of a truck repair facility
TAZ 4	12	CUP16-13	119 W. Baseline Street	A request to allow the establishment and operation of an event facility
TAZ 4	15	DP-D14-20, TPM 19573 GPA 14-09	255 S. Waterman Avenue (Hillwood Investments)	General Plan Amendment and Zone Map Amendment to construct a 427,000-sq ft. warehouse building
TAZ 4	17	DP-D15-07	386 S. Allen Street	Construction and establishment of a truck parking lot and 200 square foot guard shack on a vacant parcel
TAZ 4	24	DP-P16-04	505/525 E. Rialto Avenue	A request to allow the development of a 38-unit apartment complex
TAZ 5	2	CUP13-18	1027 S. Washington Avenue	Establish truck storage yard
TAZ 5	20	DP-D15-14	270 E Central Avenue	A request to allow the development, establishment and operation of an industrial building containing approx. 127,327sqft
TAZ 6	13	CUP16-14	SW of E Street, South of Orange Show Road	A request to allow the development, establishemtn and operation of a used car dealership
TAZ 7	18	DP-D15-09	N/W corner of Central Avenue and Valley View Avenue	Construction of 154,560 square foot industrial building on 7.8 acres
TAZ 8	19	DP-D15-13	West of Lena Road between Orange Show Road & Norman Road	Request to develop, establish and operate an industrial building containing approx. 337,000 sqft, and the required landscaping and off-street parking improvements on a vacant parcel
TAZ 9	16	DP-D15-06	990 E. Mill Street	Construction of two (2) industrial buildings (202,295 sf and 177,575 sf)
TAZ 10	3	CUP13-26 MM15-06	806 S. Tippecanoe	Construct a gas station with a 3,050-sq ft. convenience store with a Type 20 ABC license (Off-sale, Beer & Wine), and a 2,000-square foot restaurant
TAZ 10	6	CUP14-24	975 E. Norman Road	Establish a truck storage yard
TAZ 11	8	CUP15-12	1155 E. Gould Street	Construction of 2,800 square foot restaurant with drive- thru
TAZ 11	11	CUP16-12	SE Corner of Tippecanoe Avenue	A request to allow the development and operation of a resaurant containing approx. 3,823 sqft with a drive- thru on a vacant parcel containing approx. 1.15 acres
TAZ 11	14	DP-D14-17	325 E. Hospitality Lane (Golden Corral)	Construct an 11,300-sq ft. Golden Corral restaurant

TAZ 11	21	DP-D16-09	1333 S. Tippecanoe Avenue	A request to allow the development, establishment and operation of two (2) buildings, and the required landscaping and off-street parking improvements

Appendix B-4 - Cumulative Projects Trip Generation

TAZ	Proj Number	Application Number	Land Use	Units[1]		Peak Hour AM Peak Hour In	Out	Total	PM Peak Hour In	Out	Total	Daily
TAZ 1	22	DP-D16-15	Warehouse	2.8	TSF	1	0	1	0	1	1	13
TAZ 2	23	DP-P15-04	Warehouse	14.857	TSF	4	2	6	2	4	6	71
TAZ 3	4	TPM 19534 DF	Hospital	150	TSF	90	53	143	53	86	140	1,983
TAZ 3	7	CUP15-07	School	300	Students	718	587	1,305	186	171	357	4,134
TAZ 3 Total					TAZ 3 Total	808	640	1,448	239	257	497	6,117
TAZ 4	1	CUP11-13, TT	Mixed Use									
			Sr Housing	75	DU	5	10	15	10	9	19	258
			Apartment	337	DU	34	137	172	136	73	209	2,241
			Condo	38	DU	3	14	17	13	7	20	221
TAZ 4	5	CUP14-20	Learning Center	16.266	TSF	22	11	33	22	23	45	550
TAZ 4	9	CUP15-14	Fast Food	5.542	TSF	64	62	126	47	43	90	1,347
TAZ 4	10	CUP16-09	Truck Repair	15.865	TSF	11	11	11	11	11	11	216
TAZ 4	12	CUP16-13	Event Center	5.056	TSF	7	4	10	7	7	14	171
TAZ 4	15	DP-D14-20, TF	Warehouse	427	TSF	54	24	78	26	58	85	1,187
TAZ 4	17	DP-D15-07	Truck Parking	2.49	Acres	2	2	2	2	2	2	34
TAZ 4	24	DP-P16-04	Truck Parking	2.49	Acres	2	2	2	2	2	2	34
TAZ 4 Total					TAZ 4 Total	204	277	466	276	235	497	6,259
TAZ 5	2	CUP13-18	Apartment	38	DU	4	16	19	15	8	24	253
TAZ 5	20	DP-D15-14	Warehouse	127.327	TSF	16	7	23	8	17	25	354
TAZ 5 Total					TAZ 5 Total	20	23	42	23	25	49	607
TAZ 6	13	CUP16-14	Car Dealer	0.644	TSF	1	0	1	1	1	2	21
TAZ 7	18	DP-D15-09	Warehouse	154.56	TSF	19	9	28	10	21	31	430
TAZ 8	19	DP-D15-13	Warehouse	337	TSF	42	19	61	21	46	67	937
TAZ 9	16	DP-D15-06	Warehouse	380	TSF	48	21	69	23	52	75	1,056
TAZ 10	3	CUP13-26 MM	Gas/C-Store	3.05	TSF	21	21	42	26	26	53	877
			Fast Food	3.823	TSF	44	43	87	32	30	62	929
TAZ 10	6	CUP14-24	Truck Yard	3.28	TSF	2	2	2	2	2	2	45
TAZ 10 Total					TAZ 10 Total	67	66	131	60	58	117	1,851
TAZ 11	8	CUP15-12	FF w/Drivethru	2.8	TSF	32	31	64	24	22	46	681
TAZ 11	11	CUP16-12	FF w/Drivethru	3.823	TSF	44	43	87	32	30	62	929
TAZ 11	14	DP-D14-17	Restaurant	11.3	TSF	67	55	122	67	45	111	1,437
TAZ 11	21	DP-D16-09	Warehouse	410	TSF	51	23	75	25	56	81	1,139
TAZ 11 Total					TAZ 11 Total	194	152	348	148	153	300	4,186
Total Trip Generation of Cumulative Projects						1,408	1,209	2,601	803	853	1,642	21,548

Table B-4 - Cumulative Project Trips

	AM Peak Hour	PM Peak Hour
	Cumulative Project Trips	Cumulative Project Trips
1 . I-215 SB Ramps and Inland Center Drive		
NBL	0	0
NBT	1	2
NBR	1	1
SBL	11	26
SBT	2	1
SBR	0	0
EBL	0	0
EBT	0	0
EBR	1	1
WBL	0	0
WBT	0	0
WBR	24	12
North Leg		
Approach	13	27
Departure	25	14
Total	38	41
South Leg		
Approach	2	3
Departure	3	2
Total	5	5
East Leg		
Approach	24	12
Departure	12	27
Total	36	39
West Leg		
Approach	1	1
Departure	0	0
Total	1	1
Total Approaches		
Approach	40	43
Departure	40	43
Total	80	86

Table B-4 - Cumulative Project Trips

	AM Peak Hour	PM Peak Hour
	Cumulative Project Trips	Cumulative Project Trips
2 I-215 NB Ramps and Inland Center Drive		
NBL	2	2
NBT	24	12
NBR	0	0
SBL	0	0
SBT	11	26
SBR	0	0
EBL	0	0
EBT	0	0
EBR	0	0
WBL	0	0
WBT	0	0
WBR	0	0
North Leg		
Approach	11	26
Departure	24	12
Total	35	38
South Leg		
Approach	26	14
Departure	11	26
Total	37	40
East Leg		
Approach	0	0
Departure	0	0
Total	0	0
West Leg		
Approach	0	0
Departure	2	2
Total	2	2
Total Approaches		
Approach	37	40
Departure	37	40
Total	74	80

Table B-4 - Cumulative Project Trips

	AM Peak Hour	PM Peak Hour
	Cumulative Project Trips	Cumulative Project Trips
3 I-215 NB Ramps and Mill Street		
NBL	0	0
NBT	0	0
NBR	0	0
SBL	0	0
SBT	0	0
SBR	0	0
EBL	0	0
EBT	74	45
EBR	0	0
WBL	0	0
WBT	38	18
WBR	27	36
North Leg		
Approach	0	0
Departure	27	36
Total	27	36
South Leg		
Approach	0	0
Departure	0	0
Total	0	0
East Leg		
Approach	65	54
Departure	74	45
Total	139	99
West Leg		
Approach	74	45
Departure	38	18
Total	112	63
Total Approaches		
Approach	139	99
Departure	139	99
Total	278	198

Table B-4 - Cumulative Project Trips

	AM Peak Hour	PM Peak Hour
	Cumulative Project Trips	Cumulative Project Trips
4 S E Street/ Inland Center Drive/ W Mill Street		
NBL	0	0
NBT	40	12
NBR	0	0
SBL	0	0
SBT	32	13
SBR	32	13
EBL	40	12
EBT	34	33
EBR	0	0
WBL	0	0
WBT	32	40
WBR	0	0
North Leg		
Approach	64	26
Departure	80	24
Total	144	50
South Leg		
Approach	40	12
Departure	32	13
Total	72	25
East Leg		
Approach	32	40
Departure	34	33
Total	66	73
West Leg		
Approach	74	45
Departure	64	53
Total	138	98
Total Approaches		
Approach	210	123
Departure	210	123
Total	420	246

Table B-4 - Cumulative Project Trips

	AM Peak Hour	PM Peak Hour
	Cumulative Project Trips	Cumulative Project Trips
5 S Arrowhead Avenue and W Mill Street		
NBL	0	0
NBT	0	0
NBR	0	0
SBL	0	0
SBT	0	0
SBR	0	0
EBL	0	0
EBT	58	44
EBR	0	0
WBL	0	0
WBT	43	66
WBR	0	0
North Leg		
Approach	0	0
Departure	0	0
Total	0	0
South Leg		
Approach	0	0
Departure	0	0
Total	0	0
East Leg		
Approach	43	66
Departure	58	44
Total	101	110
West Leg		
Approach	58	44
Departure	43	66
Total	101	110
Total Approaches		
Approach	101	110
Departure	101	110
Total	202	220

Table B-4 - Cumulative Project Trips

	AM Peak Hour	PM Peak Hour
	Cumulative Project Trips	Cumulative Project Trips
6 S Waterman Avenue and E Mill Street		
NBL	7	8
NBT	12	17
NBR	0	0
SBL	14	12
SBT	16	14
SBR	19	16
EBL	14	19
EBT	38	18
EBR	6	7
WBL	0	0
WBT	17	42
WBR	10	14
North Leg		
Approach	49	42
Departure	36	50
Total	85	92
South Leg		
Approach	19	25
Departure	22	21
Total	41	46
East Leg		
Approach	27	56
Departure	52	30
Total	79	86
West Leg		
Approach	58	44
Departure	43	66
Total	101	110
Total Approaches		
Approach	153	167
Departure	153	167
Total	306	334

Table B-4 - Cumulative Project Trips

	AM Peak Hour	PM Peak Hour
	Cumulative Project Trips	Cumulative Project Trips
7 Lena Road and E Mill Street		
NBL	0	0
NBT	0	0
NBR	0	0
SBL	0	0
SBT	0	0
SBR	0	0
EBL	0	0
EBT	52	30
EBR	0	0
WBL	0	0
WBT	27	56
WBR	0	0
North Leg		
Approach	0	0
Departure	0	0
Total	0	0
South Leg		
Approach	0	0
Departure	0	0
Total	0	0
East Leg		
Approach	27	56
Departure	52	30
Total	79	86
West Leg		
Approach	52	30
Departure	27	56
Total	79	86
Total Approaches		
Approach	79	86
Departure	79	86
Total	158	172

Table B-4 - Cumulative Project Trips

	AM Peak Hour	PM Peak Hour
	Cumulative Project Trips	Cumulative Project Trips
8 Tippecanoe Avenue and E Mill Street		
NBL	20	19
NBT	29	36
NBR	0	0
SBL	0	0
SBT	40	28
SBR	0	0
EBL	0	0
EBT	0	0
EBR	18	22
WBL	0	0
WBT	0	0
WBR	0	0
North Leg		
Approach	40	28
Departure	29	36
Total	69	64
South Leg		
Approach	49	55
Departure	58	50
Total	107	105
East Leg		
Approach	0	0
Departure	0	0
Total	0	0
West Leg		
Approach	18	22
Departure	20	19
Total	38	41
Total Approaches		
Approach	107	105
Departure	107	105
Total	214	210

Table B-4 - Cumulative Project Trips

	AM Peak Hour	PM Peak Hour
	Cumulative Project Trips	Cumulative Project Trips
9 Lena Road and Project North Driveway		
NBL	0	0
NBT	0	0
NBR	0	0
SBL	0	0
SBT	0	0
SBR	0	0
EBL	0	0
EBT	0	0
EBR	0	0
WBL	0	0
WBT	0	0
WBR	0	0
North Leg		
Approach	0	0
Departure	0	0
Total	0	0
South Leg		
Approach	0	0
Departure	0	0
Total	0	0
East Leg		
Approach	0	0
Departure	0	0
Total	0	0
West Leg		
Approach	0	0
Departure	0	0
Total	0	0
Total Approaches		
Approach	0	0
Departure	0	0
Total	0	0

Table B-4 - Cumulative Project Trips

	AM Peak Hour	PM Peak Hour
	Cumulative Project Trips	Cumulative Project Trips
10 Lena Road and Project Central Driveway		
NBL	0	0
NBT	0	0
NBR	0	0
SBL	0	0
SBT	0	0
SBR	0	0
EBL	0	0
EBT	0	0
EBR	0	0
WBL	0	0
WBT	0	0
WBR	0	0
North Leg		
Approach	0	0
Departure	0	0
Total	0	0
South Leg		
Approach	0	0
Departure	0	0
Total	0	0
East Leg		
Approach	0	0
Departure	0	0
Total	0	0
West Leg		
Approach	0	0
Departure	0	0
Total	0	0
Total Approaches		
Approach	0	0
Departure	0	0
Total	0	0

Table B-4 - Cumulative Project Trips

	AM Peak Hour	PM Peak Hour
	Cumulative Project Trips	Cumulative Project Trips
11 Lena Road and Project South Driveway		
NBL	0	0
NBT	0	0
NBR	0	0
SBL	0	0
SBT	0	0
SBR	0	0
EBL	0	0
EBT	0	0
EBR	0	0
WBL	0	0
WBT	0	0
WBR	0	0
North Leg		
Approach	0	0
Departure	0	0
Total	0	0
South Leg		
Approach	0	0
Departure	0	0
Total	0	0
East Leg		
Approach	0	0
Departure	0	0
Total	0	0
West Leg		
Approach	0	0
Departure	0	0
Total	0	0
Total Approaches		
Approach	0	0
Departure	0	0
Total	0	0

Table B-5 - Opening Year Base Plus Cumulative Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj
1 . I-215 SB Ramps and Inland Center Drive										
NBL	0	0	0	0	0	1	0	1	0	1
NBT	352	1	353	0	353	458	2	460	0	460
NBR	263	1	264	0	264	250	1	251	0	251
SBL	172	11	183	11	194	412	26	438	25	463
SBT	483	2	485	0	485	566	1	567	0	567
SBR	0	0	0	0	0	0	0	0	0	0
EBL	160	0	160	0	160	227	0	227	0	227
EBT	318	0	318	0	318	348	0	348	0	348
EBR	281	1	282	0	282	305	1	306	0	306
WBL	0	0	0	0	0	0	0	0	0	0
WBT	0	0	0	0	0	0	0	0	0	0
WBR	0	24	24	0	24	0	12	12	0	12
North Leg										
Approach	655	13	668	11	679	978	27	1,005	25	1,030
Departure	512	25	537	0	537	685	14	699	0	699
Total	1,167	38	1,205	11	1,216	1,663	41	1,704	25	1,729
South Leg										
Approach	615	2	617	0	617	709	3	712	0	712
Departure	764	3	767	0	767	871	2	873	0	873
Total	1,379	5	1,384	0	1,384	1,580	5	1,585	0	1,585
East Leg										
Approach	0	24	24	0	24	0	12	12	0	12
Departure	753	12	765	11	776	1,010	27	1,037	25	1,062
Total	753	36	789	11	800	1,010	39	1,049	25	1,074
West Leg										
Approach	759	1	760	0	760	880	1	881	0	881
Departure	0	0	0	0	0	1	0	1	0	1
Total	759	1	760	0	760	881	1	882	0	882
Total Approaches										
Approach	2,029	40	2,069	11	2,080	2,567	43	2,610	25	2,635
Departure	2,029	40	2,069	11	2,080	2,567	43	2,610	25	2,635
Total	4,058	80	4,138	22	4,160	5,134	86	5,220	50	5,270

Table B-5 - Opening Year Base Plus Cumulative Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj
2 . I-215 NB Ramps and Inland Center Drive										
NBL	190	2	192	0	192	227	2	229	0	229
NBT	341	24	365	0	365	458	12	470	0	470
NBR	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0
SBT	296	11	307	11	318	685	26	711	25	736
SBR	23	0	23	0	23	202	0	202	0	202
EBL	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0
WBL	379	0	379	0	379	287	0	287	0	287
WBT	280	0	280	0	280	307	0	307	0	307
WBR	481	0	481	22	503	356	0	356	11	367
North Leg										
Approach	319	11	330	11	341	887	26	913	25	938
Departure	822	24	846	22	868	814	12	826	11	837
Total	1,141	35	1,176	33	1,209	1,701	38	1,739	36	1,775
South Leg										
Approach	531	26	557	0	557	685	14	699	0	699
Departure	675	11	686	11	697	972	26	998	25	1,023
Total	1,206	37	1,243	11	1,254	1,657	40	1,697	25	1,722
East Leg										
Approach	1,140	0	1,140	22	1,162	950	0	950	11	961
Departure	0	0	0	0	0	0	0	0	0	0
Total	1,140	0	1,140	22	1,162	950	0	950	11	961
West Leg										
Approach	0	0	0	0	0	0	0	0	0	0
Departure	493	2	495	0	495	736	2	738	0	738
Total	493	2	495	0	495	736	2	738	0	738
Total Approaches										
Approach	1,990	37	2,027	33	2,060	2,522	40	2,562	36	2,598
Departure	1,990	37	2,027	33	2,060	2,522	40	2,562	36	2,598
Total	3,980	74	4,054	66	4,120	5,044	80	5,124	72	5,196

Table B-5 - Opening Year Base Plus Cumulative Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj
3 . I-215 NB Ramps and Mill Street										
NBL	204	0	204	0	204	253	0	253	0	253
NBT	2	0	2	0	2	5	0	5	0	5
NBR	85	0	85	0	85	80	0	80	0	80
SBL	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0
EBL	467	0	467	0	467	560	0	560	0	560
EBT	799	74	873	17	890	753	45	798	8	806
EBR	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0
WBT	348	38	386	0	386	605	18	623	0	623
WBR	170	27	197	8	205	482	36	518	18	536
North Leg										
Approach	0	0	0	0	0	0	0	0	0	0
Departure	639	27	666	8	674	1,047	36	1,083	18	1,101
Total	639	27	666	8	674	1,047	36	1,083	18	1,101
South Leg										
Approach	291	0	291	0	291	338	0	338	0	338
Departure	0	0	0	0	0	0	0	0	0	0
Total	291	0	291	0	291	338	0	338	0	338
East Leg										
Approach	518	65	583	8	591	1,087	54	1,141	18	1,159
Departure	884	74	958	17	975	833	45	878	8	886
Total	1,402	139	1,541	25	1,566	1,920	99	2,019	26	2,045
West Leg										
Approach	1,266	74	1,340	17	1,357	1,313	45	1,358	8	1,366
Departure	552	38	590	0	590	858	18	876	0	876
Total	1,818	112	1,930	17	1,947	2,171	63	2,234	8	2,242
Total Approaches										
Approach	2,075	139	2,214	25	2,239	2,738	99	2,837	26	2,863
Departure	2,075	139	2,214	25	2,239	2,738	99	2,837	26	2,863
Total	4,150	278	4,428	50	4,478	5,476	198	5,674	52	5,726

Table B-5 - Opening Year Base Plus Cumulative Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj
4 . S E Street/ Inland Center Dr/ W Mill St										
NBHL	12	0	12	0	12	47	0	47	0	47
NBL	52	0	52	0	52	223	0	223	0	223
NBT	119	40	159	0	159	270	12	282	0	282
NBR	70	0	70	0	70	122	0	122	0	122
SBL	39	0	39	0	39	29	0	29	0	29
SBT	139	32	171	0	171	219	13	232	0	232
SBR	29	32	61	0	61	54	13	67	0	67
SBBR	35	0	35	0	35	60	0	60	0	60
EBL	63	40	103	0	103	67	12	79	0	79
EBT	564	34	598	17	615	471	33	504	8	512
EBR	61	0	61	0	61	71	0	71	0	71
EBHR	0	0	0	0	0	2	0	2	0	2
WBL	63	0	63	0	63	110	0	110	0	110
WBBL	218	11	229	22	251	320	26	346	11	357
WBT	425	32	457	8	465	612	40	652	18	670
WBR	14	0	14	0	14	16	0	16	0	16
NEHL	4	0	4	0	4	13	0	13	0	13
NEBL	110	0	110	0	110	123	0	123	0	123
NEBR	290	24	314	22	336	305	12	317	11	328
NEHR	47	0	47	0	47	94	0	94	0	94
North Leg										
Approach	242	64	306	0	306	362	26	388	0	388
Departure	306	80	386	0	386	476	24	500	0	500
Total	548	144	692	0	692	838	50	888	0	888
South Leg										
Approach	253	40	293	0	293	662	12	674	0	674
Departure	310	32	342	0	342	494	13	507	0	507
Total	563	72	635	0	635	1,156	25	1,181	0	1,181
East Leg										
Approach	720	43	763	30	793	1,058	66	1,124	29	1,153
Departure	963	58	1,021	39	1,060	927	45	972	19	991
Total	1,683	101	1,784	69	1,853	1,985	111	2,096	48	2,144
West Leg										
Approach	688	74	762	17	779	611	45	656	8	664
Departure	510	64	574	8	582	902	53	955	18	973
Total	1,198	138	1,336	25	1,361	1,513	98	1,611	26	1,637
Southwest Leg										
Approach	451	24	475	22	497	535	12	547	11	558
Departure	265	11	276	22	298	429	26	455	11	466
Total	716	35	751	44	795	964	38	1,002	22	1,024
Total Approaches										
Approach	2,354	245	2,599	69	2,668	3,228	161	3,389	48	3,437
Departure	2,354	245	2,599	69	2,668	3,228	161	3,389	48	3,437
Total	4,708	490	5,198	138	5,336	6,456	322	6,778	96	6,874

Table B-5 - Opening Year Base Plus Cumulative Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj
5 . S Arrowhead Avenue and W Mill Street										
NBL	71	0	71	0	71	152	0	152	0	152
NBT	161	0	161	0	161	283	0	283	0	283
NBR	53	0	53	0	53	75	0	75	0	75
SBL	40	0	40	0	40	38	0	38	0	38
SBT	180	0	180	0	180	282	0	282	0	282
SBR	41	0	41	0	41	70	0	70	0	70
EBL	63	0	63	0	63	67	0	67	0	67
EBT	766	58	824	39	863	730	44	774	18	792
EBR	181	0	181	0	181	118	0	118	0	118
WBL	68	0	68	0	68	78	0	78	0	78
WBT	540	43	583	18	601	829	66	895	43	938
WBR	29	0	29	0	29	41	0	41	0	41
North Leg										
Approach	261	0	261	0	261	390	0	390	0	390
Departure	253	0	253	0	253	391	0	391	0	391
Total	514	0	514	0	514	781	0	781	0	781
South Leg										
Approach	285	0	285	0	285	510	0	510	0	510
Departure	429	0	429	0	429	478	0	478	0	478
Total	714	0	714	0	714	988	0	988	0	988
East Leg										
Approach	637	43	680	18	698	948	66	1,014	43	1,057
Departure	859	58	917	39	956	843	44	887	18	905
Total	1,496	101	1,597	57	1,654	1,791	110	1,901	61	1,962
West Leg										
Approach	1,010	58	1,068	39	1,107	915	44	959	18	977
Departure	652	43	695	18	713	1,051	66	1,117	43	1,160
Total	1,662	101	1,763	57	1,820	1,966	110	2,076	61	2,137
Total Approaches										
Approach	2,193	101	2,294	57	2,351	2,763	110	2,873	61	2,934
Departure	2,193	101	2,294	57	2,351	2,763	110	2,873	61	2,934
Total	4,386	202	4,588	114	4,702	5,526	220	5,746	122	5,868

Table B-5 - Opening Year Base Plus Cumulative Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj
6 . S Waterman Avenue and E Mill Street										
NBL	149	7	156	0	156	175	8	183	0	183
NBT	525	12	537	0	537	706	17	723	0	723
NBR	118	0	118	3	121	108	0	108	2	110
SBL	110	14	124	2	126	123	12	135	1	136
SBT	600	16	616	0	616	744	14	758	0	758
SBR	117	19	136	0	136	110	16	126	0	126
EBL	110	14	124	0	124	165	19	184	0	184
EBT	514	38	552	39	591	467	18	485	18	503
EBR	176	6	182	0	182	196	7	203	0	203
WBL	151	0	151	2	153	175	0	175	4	179
WBT	359	17	376	18	394	552	42	594	43	637
WBR	82	10	92	1	93	108	14	122	2	124
North Leg										
Approach	827	49	876	2	878	977	42	1,019	1	1,020
Departure	717	36	753	1	754	979	50	1,029	2	1,031
Total	1,544	85	1,629	3	1,632	1,956	92	2,048	3	2,051
South Leg										
Approach	792	19	811	3	814	989	25	1,014	2	1,016
Departure	927	22	949	2	951	1,115	21	1,136	4	1,140
Total	1,719	41	1,760	5	1,765	2,104	46	2,150	6	2,156
East Leg										
Approach	592	27	619	21	640	835	56	891	49	940
Departure	742	52	794	44	838	698	30	728	21	749
Total	1,334	79	1,413	65	1,478	1,533	86	1,619	70	1,689
West Leg										
Approach	800	58	858	39	897	828	44	872	18	890
Departure	625	43	668	18	686	837	66	903	43	946
Total	1,425	101	1,526	57	1,583	1,665	110	1,775	61	1,836
Total Approaches										
Approach	3,011	153	3,164	65	3,229	3,629	167	3,796	70	3,866
Departure	3,011	153	3,164	65	3,229	3,629	167	3,796	70	3,866
Total	6,022	306	6,328	130	6,458	7,258	334	7,592	140	7,732

Table B-5 - Opening Year Base Plus Cumulative Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj
7 . Lena Road and E Mill Street										
NBL	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0
SBL	57	0	57	6	63	101	0	101	15	116
SBT	0	0	0	0	0	0	0	0	0	0
SBR	135	0	135	21	156	167	0	167	49	216
EBL	174	0	174	44	218	121	0	121	21	142
EBT	742	52	794	0	794	699	30	729	0	729
EBR	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0
WBT	591	27	618	0	618	835	56	891	0	891
WBR	86	0	86	14	100	36	0	36	6	42
North Leg										
Approach	192	0	192	27	219	268	0	268	64	332
Departure	260	0	260	58	318	157	0	157	27	184
Total	452	0	452	85	537	425	0	425	91	516
South Leg										
Approach	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
East Leg										
Approach	677	27	704	14	718	871	56	927	6	933
Departure	799	52	851	6	857	800	30	830	15	845
Total	1,476	79	1,555	20	1,575	1,671	86	1,757	21	1,778
West Leg										
Approach	916	52	968	44	1,012	820	30	850	21	871
Departure	726	27	753	21	774	1,002	56	1,058	49	1,107
Total	1,642	79	1,721	65	1,786	1,822	86	1,908	70	1,978
Total Approaches										
Approach	1,785	79	1,864	85	1,949	1,959	86	2,045	91	2,136
Departure	1,785	79	1,864	85	1,949	1,959	86	2,045	91	2,136
Total	3,570	158	3,728	170	3,898	3,918	172	4,090	182	4,272

Table B-5 - Opening Year Base Plus Cumulative Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj
8 . Tippecanoe Avenue and E Mill Street										
NBL	226	20	246	13	259	127	19	146	6	152
NBT	743	29	772	0	772	1,145	36	1,181	0	1,181
NBR	112	0	112	0	112	17	0	17	0	17
SBL	15	0	15	0	15	7	0	7	0	7
SBT	968	40	1,008	0	1,008	983	28	1,011	0	1,011
SBR	267	0	267	1	268	208	0	208	1	209
EBL	143	0	143	1	144	305	0	305	1	306
EBT	78	0	78	0	78	8	0	8	0	8
EBR	195	18	213	6	219	260	22	282	14	296
WBL	21	0	21	0	21	27	0	27	0	27
WBT	18	0	18	0	18	25	0	25	0	25
WBR	2	0	2	0	2	2	0	2	0	2
North Leg										
Approach	1,250	40	1,290	1	1,291	1,198	28	1,226	1	1,227
Departure	888	29	917	1	918	1,452	36	1,488	1	1,489
Total	2,138	69	2,207	2	2,209	2,650	64	2,714	2	2,716
South Leg										
Approach	1,081	49	1,130	13	1,143	1,289	55	1,344	6	1,350
Departure	1,184	58	1,242	6	1,248	1,270	50	1,320	14	1,334
Total	2,265	107	2,372	19	2,391	2,559	105	2,664	20	2,684
East Leg										
Approach	41	0	41	0	41	54	0	54	0	54
Departure	205	0	205	0	205	32	0	32	0	32
Total	246	0	246	0	246	86	0	86	0	86
West Leg										
Approach	416	18	434	7	441	573	22	595	15	610
Departure	511	20	531	14	545	360	19	379	7	386
Total	927	38	965	21	986	933	41	974	22	996
Total Approaches										
Approach	2,788	107	2,895	21	2,916	3,114	105	3,219	22	3,241
Departure	2,788	107	2,895	21	2,916	3,114	105	3,219	22	3,241
Total	5,576	214	5,790	42	5,832	6,228	210	6,438	44	6,482

Table B-5 - Opening Year Base Plus Cumulative Peak Hour PCE Volume Summary

		AM Peak Hour					PM Peak Hour				
		2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj
9	Lena Road/North Dwy										
	NBL	0	0	0	0	0	0	0	0	0	0
	NBT	260	0	260	0	260	157	0	157	0	157
	NBR	0	0	0	20	20	0	0	0	10	10
	SBL	0	0	0	1	1	0	0	0	0	0
	SBT	192	0	192	0	192	268	0	268	0	268
	SBR	0	0	0	0	0	0	0	0	0	0
	EBL	0	0	0	0	0	0	0	0	0	0
	EBT	0	0	0	0	0	0	0	0	0	0
	EBR	0	0	0	0	0	0	0	0	0	0
	WBL	0	0	0	10	10	0	0	0	22	22
	WBT	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	1	1
	North Leg										
	Approach	192	0	192	1	193	268	0	268	0	268
	Departure	260	0	260	0	260	157	0	157	1	158
	Total	452	0	452	1	453	425	0	425	1	426
	South Leg										
	Approach	260	0	260	20	280	157	0	157	10	167
	Departure	192	0	192	10	202	268	0	268	22	290
	Total	452	0	452	30	482	425	0	425	32	457
	East Leg										
	Approach	0	0	0	10	10	0	0	0	23	23
	Departure	0	0	0	21	21	0	0	0	10	10
	Total	0	0	0	31	31	0	0	0	33	33
	West Leg										
	Approach	0	0	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0
	Total Approaches										
	Approach	452	0	452	31	483	425	0	425	33	458
	Departure	452	0	452	31	483	425	0	425	33	458
	Total	904	0	904	62	966	850	0	850	66	916

Table B-5 - Opening Year Base Plus Cumulative Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj
10 . Lena Road and Project Central Driveway										
NBL	0	0	0	0	0	0	0	0	0	0
NBT	260	0	260	20	280	157	0	157	10	167
NBR	0	0	0	10	10	0	0	0	5	5
SBL	0	0	0	0	0	0	0	0	0	0
SBT	192	0	192	10	202	268	0	268	22	290
SBR	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	5	5	0	0	0	11	11
WBT	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0	0	0
North Leg										
Approach	192	0	192	10	202	268	0	268	22	290
Departure	260	0	260	20	280	157	0	157	10	167
Total	452	0	452	30	482	425	0	425	32	457
South Leg										
Approach	260	0	260	30	290	157	0	157	15	172
Departure	192	0	192	15	207	268	0	268	33	301
Total	452	0	452	45	497	425	0	425	48	473
East Leg										
Approach	0	0	0	5	5	0	0	0	11	11
Departure	0	0	0	10	10	0	0	0	5	5
Total	0	0	0	15	15	0	0	0	16	16
West Leg										
Approach	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Total Approaches										
Approach	452	0	452	45	497	425	0	425	48	473
Departure	452	0	452	45	497	425	0	425	48	473
Total	904	0	904	90	994	850	0	850	96	946

Table B-5 - Opening Year Base Plus Cumulative Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj	2018 Opening Yr. Base	Cumulative Projects Trips	2018 OY Base+ Cumulative	Project Trips	2018 OY Base+ Cumul+Proj
11 . Lena Road and Project South Driveway										
NBL	0	0	0	0	0	0	0	0	0	0
NBT	260	0	260	30	290	157	0	157	15	172
NBR	0	0	0	29	29	0	0	0	14	14
SBL	0	0	0	0	0	0	0	0	0	0
SBT	192	0	192	14	206	268	0	268	33	301
SBR	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	14	14	0	0	0	32	32
WBT	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0	0	0
North Leg										
Approach	192	0	192	14	206	268	0	268	33	301
Departure	260	0	260	30	290	157	0	157	15	172
Total	452	0	452	44	496	425	0	425	48	473
South Leg										
Approach	260	0	260	59	319	157	0	157	29	186
Departure	192	0	192	28	220	268	0	268	65	333
Total	452	0	452	87	539	425	0	425	94	519
East Leg										
Approach	0	0	0	14	14	0	0	0	32	32
Departure	0	0	0	29	29	0	0	0	14	14
Total	0	0	0	43	43	0	0	0	46	46
West Leg										
Approach	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Total Approaches										
Approach	452	0	452	87	539	425	0	425	94	519
Departure	452	0	452	87	539	425	0	425	94	519
Total	904	0	904	174	1,078	850	0	850	188	1,038

Table B-6 - Forecast Link Volume Worksheet
Year 2035 Background Conditions

1 I-215 SB Ramps and Inland Center Drive

AM Peak Hour

		Existing 2016 Volume (Total Vehicle)		Existing 2016 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2016 to 2040 Link Vol Growth[1]	Forecast 2040 Link Volume
Northbound	Left	0	Approach	568	1,002	1,952	950	361	321	889
	Through	329	Departure	701	1,182	1,612	430	163	145	846
	Right	239								
Southbound	Left	128	Approach	570	2,198	3,487	1,289	490	435	1,005
	Through	442	Departure	476	1,393	2,079	686	261	232	708
	Right	0								
Eastbound	Left	147	Approach	678	1,389	1,677	288	110	97	775
	Through	272	Departure	0	0	0	0	0	0	0
	Right	259								
Westbound	Left	0	Approach	0	0	0	0	0	0	0
	Through	0	Departure	639	2,013	3,424	1,411	536	477	1,116
	Right	0								

PM Peak Hour

Northbound	Left	1	Approach	667	1,663	2,848	1,184	332	295	962
	Through	432	Departure	816	1,987	2,941	953	267	237	1,053
	Right	234								
Southbound	Left	370	Approach	901	5,349	6,902	1,553	435	387	1,288
	Through	531	Departure	644	2,085	2,838	753	211	187	831
	Right	0								
Eastbound	Left	212	Approach	809	1,690	2,977	1,287	360	320	1,129
	Through	312	Departure	1	0	0	0	0	0	1
	Right	285								
Westbound	Left	0	Approach	0	0	0	0	0	0	0
	Through	0	Departure	916	4,630	6,948	2,318	649	577	1,493
	Right	0								

Modeled base year (2008) to modeled future year (2035) conditions represent 27 years of traffic growth. Since it is 19 years from 2016 to 2040 the growth represents 88.89 % of the growth between 2008 and 2035 model years. Also the a.m. peak hour is 38% of the peak period and the p.m. peak hour is 28 percent of the peak period.

Table B-6 - Forecast Link Volume Worksheet
Year 2035 Background Conditions

2 I-215 NB Ramps and Inland Center Drive

AM Peak Hour

		Existing 2016 Volume (Total Vehicle)		Existing 2016 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2016 to 2040 Link Vol Growth[1]	Forecast 2040 Link Volume
Northbound	Left	175	Approach	489	1,393	2,079	686	261	232	721
	Through	314	Departure	586	2,198	3,487	1,289	490	435	1,021
	Right	0								
Southbound	Left	0	Approach	257	1,959	3,044	1,085	412	366	623
	Through	235	Departure	746	2,662	4,420	1,758	668	594	1,340
	Right	22								
Eastbound	Left	0	Approach	0	0	0	0	0	0	0
	Through	0	Departure	448	453	2,141	1,687	641	570	1,018
	Right	0								
Westbound	Left	351	Approach	1,034	1,961	4,924	2,963	1,126	1,001	2,035
	Through	251	Departure	0	0	0	0	0	0	0
	Right	432								

PM Peak Hour

Northbound	Left	214	Approach	644	2,085	2,838	753	211	187	831
	Through	430	Departure	895	5,349	6,902	1,553	435	387	1,282
	Right	0								
Southbound	Left	0	Approach	815	5,616	7,179	1,563	438	389	1,204
	Through	626	Departure	743	3,250	4,863	1,613	452	401	1,144
	Right	189								
Eastbound	Left	0	Approach	0	0	0	0	0	0	0
	Through	0	Departure	682	1,450	3,668	2,218	621	552	1,234
	Right	0								
Westbound	Left	269	Approach	861	2,348	5,416	3,068	859	764	1,625
	Through	279	Departure	0	0	0	0	0	0	0
	Right	313								

Modeled base year (2008) to modeled future year (2035) conditions represent 27 years of traffic growth. Since it is 19 years from 2016 to 2040 the growth represents 88.89 % of the growth between 2008 and 2035 model years. Also the a.m. peak hour is 38% of the peak period and the p.m. peak hour is 28 percent of the peak period.

Table B-6 - Forecast Link Volume Worksheet
Year 2035 Background Conditions

		Existing 2016 Volume (Total Vehicle)		Existing 2016 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2016 to 2040 Link Vol Growth[1]	Forecast 2040 Link Volume
3 I-215 NB Ramps and Mill Street										
AM Peak Hour										
Northbound	Left	186	Approach	263	1,082	1,143	61	23	21	284
	Through	2	Departure	0	0	0	0	0	0	0
	Right	75								
Southbound	Left	0	Approach	0	0	0	0	0	0	0
	Through	0	Departure	568	782	790	8	3	3	571
	Right	0								
Eastbound	Left	427	Approach	1,118	1,431	3,176	1,745	663	589	1,707
	Through	691	Departure	489	938	1,241	304	115	103	592
	Right	0								
Westbound	Left	0	Approach	442	595	983	389	148	131	573
	Through	303	Departure	766	1,388	3,272	1,884	716	636	1,402
	Right	139								
PM Peak Hour										
Northbound	Left	233	Approach	307	1,115	1,632	517	145	129	436
	Through	5	Departure	0	0	0	0	0	0	0
	Right	69								
Southbound	Left	0	Approach	0	0	0	0	0	0	0
	Through	0	Departure	955	2,161	3,289	1,129	316	281	1,236
	Right	0								
Eastbound	Left	520	Approach	1,202	2,265	2,817	552	155	137	1,339
	Through	682	Departure	793	2,535	3,670	1,135	318	282	1,075
	Right	0								
Westbound	Left	0	Approach	990	2,491	5,097	2,606	730	649	1,639
	Through	560	Departure	751	1,175	2,587	1,412	395	351	1,102
	Right	430								

Modeled base year (2008) to modeled future year (2035) conditions represent 27 years of traffic growth. Since it is 19 years from 2016 to 2040 the growth represents 88.89 % of the growth between 2008 and 2035 model years. Also the a.m. peak hour is 38% of the peak period and the p.m. peak hour is 28 percent of the peak period.

Table B-6 - Forecast Link Volume Worksheet
Year 2035 Background Conditions

5 S Arrowhead Avenue and W Mill Street

AM Peak Hour

		Existing 2016 Volume (Total Vehicle)		Existing 2016 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2016 to 2040 Link Vol Growth[1]	Forecast 2040 Link Volume
Northbound	Left	64	Approach	255	308	221	-87	-33	-30	225
	Through	142	Departure	377	478	1,177	699	266	236	613
	Right	49								
Southbound	Left	37	Approach	238	443	728	285	108	96	334
	Through	164	Departure	224	458	505	46	18	16	240
	Right	37								
Eastbound	Left	56	Approach	872	2,232	4,744	2,512	954	848	1,720
	Through	658	Departure	557	1,908	3,012	1,104	419	373	930
	Right	158								
Westbound	Left	55	Approach	537	1,485	2,727	1,242	472	420	957
	Through	456	Departure	744	1,624	3,727	2,103	799	710	1,454
	Right	26								

PM Peak Hour

Northbound	Left	137	Approach	469	798	1,921	1,122	314	279	748
	Through	262	Departure	433	915	936	20	6	5	438
	Right	70								
Southbound	Left	36	Approach	357	946	1,098	152	42	38	395
	Through	257	Departure	361	779	1,392	613	172	152	513
	Right	64								
Eastbound	Left	60	Approach	818	3,154	5,431	2,277	637	567	1,385
	Through	653	Departure	927	4,164	6,582	2,418	677	602	1,529
	Right	105								
Westbound	Left	71	Approach	836	3,368	5,200	1,833	513	456	1,292
	Through	726	Departure	759	2,408	4,741	2,333	653	581	1,340
	Right	39								

Modeled base year () to modeled future year () conditions represent 0 years of traffic growth. Since it is 0 years from to the growth represents % of the growth between and model years. Also the a.m. peak hour is 38% of the peak period and the p.m. peak hour is 28 percent of the peak period.

Table B-6 - Forecast Link Volume Worksheet
Year 2035 Background Conditions

6 S Waterman Avenue and E Mill Street

AM Peak Hour

		Existing 2016 Volume (Total Vehicle)		Existing 2016 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2016 to 2040 Link Vol Growth[1]	Forecast 2040 Link Volume
Northbound	Left	127	Approach	692	1,045	1,206	161	61	54	746
	Through	474	Departure	818	1,126	1,906	780	296	264	1,082
	Right	91								
Southbound	Left	98	Approach	754	1,698	2,944	1,247	474	421	1,175
	Through	549	Departure	646	1,805	1,995	189	72	64	710
	Right	107								
Eastbound	Left	98	Approach	686	1,277	2,877	1,600	608	541	1,227
	Through	435	Departure	537	1,384	2,751	1,367	519	462	999
	Right	153								
Westbound	Left	116	Approach	493	1,008	2,001	993	377	335	828
	Through	303	Departure	624	712	2,377	1,665	633	562	1,186
	Right	74								

PM Peak Hour

Northbound	Left	153	Approach	893	2,070	2,972	902	253	225	1,118
	Through	656	Departure	1,009	1,952	2,152	200	56	50	1,059
	Right	84								
Southbound	Left	114	Approach	909	3,629	4,102	473	132	118	1,027
	Through	694	Departure	909	2,790	4,761	1,971	552	491	1,400
	Right	101								
Eastbound	Left	154	Approach	743	2,225	4,441	2,216	621	552	1,295
	Through	413	Departure	725	2,801	4,421	1,621	454	403	1,128
	Right	176								
Westbound	Left	139	Approach	709	1,383	3,667	2,284	639	568	1,277
	Through	471	Departure	611	1,764	3,849	2,085	584	519	1,130
	Right	99								

Modeled base year (2008) to modeled future year (2035) conditions represent 27 years of traffic growth. Since it is 19 years from 2016 to 2040 the growth represents 88.89 % of the growth between 2008 and 2035 model years. Also the a.m. peak hour is 38% of the peak period and the p.m. peak hour is 28 percent of the peak period.

Table B-6 - Forecast Link Volume Worksheet
Year 2035 Background Conditions

7 Lena Road and E Mill Street

AM Peak Hour

		Existing 2016 Volume (Total Vehicle)		Existing 2016 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2016 to 2040 Link Vol Growth[1]	Forecast 2040 Link Volume
Northbound	Left	0	Approach	0	0	11	11	4	4	4
	Through	0	Departure	0	0	13	13	5	4	4
	Right	0								
Southbound	Left	49	Approach	161	195	236	42	16	14	175
	Through	0	Departure	229	384	620	236	90	80	309
	Right	112								
Eastbound	Left	155	Approach	536	712	2,377	1,665	633	562	1,098
	Through	381	Departure	409	1,008	2,001	993	377	335	744
	Right	0								
Westbound	Left	0	Approach	371	1,091	2,185	1,095	416	370	741
	Through	297	Departure	430	605	2,176	1,571	597	531	961
	Right	74								

PM Peak Hour

Northbound	Left	0	Approach	0	0	313	313	88	78	78
	Through	0	Departure	0	0	29	29	8	7	7
	Right	0								
Southbound	Left	90	Approach	245	626	927	301	84	75	320
	Through	0	Departure	138	418	549	131	37	33	171
	Right	155								
Eastbound	Left	106	Approach	573	1,764	3,849	2,085	584	519	1,092
	Through	467	Departure	540	1,383	3,667	2,284	639	568	1,108
	Right	0								
Westbound	Left	0	Approach	417	1,230	3,483	2,253	631	561	978
	Through	385	Departure	557	1,819	4,326	2,507	702	624	1,181
	Right	32								

Modeled base year (2008) to modeled future year (2035) conditions represent 27 years of traffic growth. Since it is 19 years from 2016 to 2040 the growth represents 88.89 % of the growth between 2008 and 2035 model years. Also the a.m. peak hour is 38% of the peak period and the p.m. peak hour is 28 percent of the peak period.

Table B-6 - Forecast Link Volume Worksheet
Year 2035 Background Conditions

8 Tippecanoe Avenue and E Mill Street

AM Peak Hour

		Existing 2016 Volume (Total Vehicle)		Existing 2016 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2016 to 2040 Link Vol Growth[1]	Forecast 2040 Link Volume
Northbound	Left	189	Approach	903	1,752	3,172	1,420	540	480	1,383
	Through	665	Departure	1,042	1,989	4,278	2,289	870	773	1,815
	Right	49								
Southbound	Left	12	Approach	1,128	2,648	4,773	2,125	807	718	1,846
	Through	870	Departure	796	1,730	2,891	1,161	441	392	1,188
	Right	246								
Eastbound	Left	129	Approach	326	419	1,377	958	364	323	649
	Through	37	Departure	444	1,101	2,154	1,052	400	355	799
	Right	160								
Westbound	Left	12	Approach	23	0	0	0	0	0	23
	Through	9	Departure	98	0	0	0	0	0	98
	Right	2								

PM Peak Hour

Northbound	Left	102	Approach	1,169	3,416	6,427	3,011	843	749	1,918
	Through	1,059	Departure	1,150	3,300	6,654	3,354	939	835	1,985
	Right	8								
Southbound	Left	5	Approach	1,102	3,527	6,161	2,635	738	656	1,758
	Through	904	Departure	1,345	4,497	7,373	2,877	805	716	2,061
	Right	193								
Eastbound	Left	284	Approach	520	1,792	4,140	2,348	657	584	1,104
	Through	4	Departure	307	938	2,701	1,762	493	439	746
	Right	232								
Westbound	Left	14	Approach	28	0	0	0	0	0	28
	Through	12	Departure	17	0	0	0	0	0	17
	Right	2								

Modeled base year (2008) to modeled future year (2035) conditions represent 27 years of traffic growth. Since it is 19 years from 2016 to 2040 the growth represents 88.89 % of the growth between 2008 and 2035 model years. Also the a.m. peak hour is 38% of the peak period and the p.m. peak hour is 28 percent of the peak period.

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume		Forecast TM Volume
1	I-215 SB Ramps and Inland Center Drive					
	A.M. Peak Hour					
	Northbound	Left	0	Approach	889	Left	0
		Through	329	Departure	846	Through	508
		Right	239			Right	381
	Southbound	Left	128	Approach	1,005	Left	353
		Through	442	Departure	708	Through	652
		Right	0			Right	0
	Eastbound	Left	147	Approach	775	Left	200
		Through	272	Departure	0	Through	381
		Right	259			Right	194
	Westbound	Left	0	Approach	0	Left	0
		Through	0	Departure	1,116	Through	0
		Right	0			Right	0
	P.M. Peak Hour					
	Northbound	Left	1	Approach	962	Left	1
		Through	432	Departure	1,053	Through	567
		Right	234			Right	394
	Southbound	Left	370	Approach	1,288	Left	599
		Through	531	Departure	831	Through	688
		Right	0			Right	0
	Eastbound	Left	212	Approach	1,129	Left	265
		Through	312	Departure	1	Through	500
		Right	285			Right	365
	Westbound	Left	0	Approach	0	Left	0
		Through	0	Departure	1,493	Through	0
		Right	0			Right	0

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume		Forecast TM Volume	
2	I-215 NB Ramps and Inland Center Drive						
	A.M. Peak Hour						
	Northbound	Left	175	Approach	721	Left	290
		Through	314	Departure	1,021	Through	431
		Right	0			Right	0
	Southbound	Left	0	Approach	623	Left	0
		Through	235	Departure	1,340	Through	532
		Right	22			Right	91
	Eastbound	Left	0	Approach	0	Left	0
		Through	0	Departure	1,018	Through	0
		Right	0			Right	0
	Westbound	Left	351	Approach	2,035	Left	489
		Through	251	Departure	0	Through	637
		Right	432			Right	909
	P.M. Peak Hour						
	Northbound	Left	214	Approach	831	Left	294
		Through	430	Departure	1,282	Through	538
		Right	0			Right	0
	Southbound	Left	0	Approach	1,204	Left	0
		Through	626	Departure	1,144	Through	856
		Right	189			Right	348
	Eastbound	Left	0	Approach	0	Left	0
		Through	0	Departure	1,234	Through	0
		Right	0			Right	0
	Westbound	Left	269	Approach	1,625	Left	425
		Through	279	Departure	0	Through	593
		Right	313			Right	607

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume		Forecast TM Volume	
3	I-215 NB Ramps and Mill Street						
	A.M. Peak Hour						
	Northbound	Left	186	Approach	284	Left	174
		Through	2	Departure	0	Through	1
		Right	75			Right	107
	Southbound	Left	0	Approach	0	Left	0
		Through	0	Departure	571	Through	0
		Right	0			Right	0
	Eastbound	Left	427	Approach	1,707	Left	416
		Through	691	Departure	592	Through	1,295
		Right	0			Right	0
	Westbound	Left	0	Approach	573	Left	0
		Through	303	Departure	1,402	Through	418
		Right	139			Right	153
	P.M. Peak Hour						
	Northbound	Left	233	Approach	436	Left	257
		Through	5	Departure	0	Through	7
		Right	69			Right	171
	Southbound	Left	0	Approach	0	Left	0
		Through	0	Departure	1,236	Through	0
		Right	0			Right	0
	Eastbound	Left	520	Approach	1,339	Left	411
		Through	682	Departure	1,075	Through	931
		Right	0			Right	0
	Westbound	Left	0	Approach	1,639	Left	0
		Through	560	Departure	1,102	Through	818
		Right	430			Right	817

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume		Forecast TM Volume	
5	S Arrowhead Avenue and W Mill Street						
	A.M. Peak Hour						
	Northbound	Left	64	Approach	225	Left	61
		Through	142	Departure	613	Through	113
		Right	49			Right	51
	Southbound	Left	37	Approach	334	Left	57
		Through	164	Departure	240	Through	226
		Right	37			Right	52
	Eastbound	Left	56	Approach	1,720	Left	87
		Through	658	Departure	930	Through	1,346
		Right	158			Right	290
	Westbound	Left	55	Approach	957	Left	98
		Through	456	Departure	1,454	Through	817
		Right	26			Right	39
	P.M. Peak Hour						
	Northbound	Left	137	Approach	748	Left	254
		Through	262	Departure	438	Through	375
		Right	70			Right	120
	Southbound	Left	36	Approach	395	Left	52
		Through	257	Departure	513	Through	244
		Right	64			Right	99
	Eastbound	Left	60	Approach	1,385	Left	90
		Through	653	Departure	1,529	Through	1,168
		Right	105			Right	124
	Westbound	Left	71	Approach	1,292	Left	70
		Through	726	Departure	1,340	Through	1,176
		Right	39			Right	49

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume		Forecast TM Volume	
6	S Waterman Avenue and E Mill Street						
	A.M. Peak Hour						
	Northbound	Left	127	Approach	746	Left	174
		Through	474	Departure	1,082	Through	458
		Right	91			Right	115
	Southbound	Left	98	Approach	1,175	Left	199
		Through	549	Departure	710	Through	740
		Right	107			Right	236
	Eastbound	Left	98	Approach	1,227	Left	150
		Through	435	Departure	999	Through	872
		Right	153			Right	204
	Westbound	Left	116	Approach	828	Left	138
		Through	303	Departure	1,186	Through	589
		Right	74			Right	102
	P.M. Peak Hour						
	Northbound	Left	153	Approach	1,118	Left	147
		Through	656	Departure	1,059	Through	860
		Right	84			Right	112
	Southbound	Left	114	Approach	1,027	Left	208
		Through	694	Departure	1,400	Through	685
		Right	101			Right	133
	Eastbound	Left	154	Approach	1,295	Left	298
		Through	413	Departure	1,128	Through	810
		Right	176			Right	187
	Westbound	Left	139	Approach	1,277	Left	187
		Through	471	Departure	1,130	Through	848
		Right	99			Right	242

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume		Forecast TM Volume	
7	Lena Road and E Mill Street						
	A.M. Peak Hour						
	Northbound	Left	0	Approach	4	Left	0
		Through	0	Departure	4	Through	0
		Right	0			Right	0
	Southbound	Left	49	Approach	175	Left	61
		Through	0	Departure	309	Through	0
		Right	112			Right	114
	Eastbound	Left	155	Approach	1,098	Left	202
		Through	381	Departure	744	Through	899
		Right	0			Right	0
	Westbound	Left	0	Approach	741	Left	0
		Through	297	Departure	961	Through	631
		Right	74			Right	107
	P.M. Peak Hour						
	Northbound	Left	0	Approach	78	Left	0
		Through	0	Departure	7	Through	0
		Right	0			Right	0
	Southbound	Left	90	Approach	320	Left	156
		Through	0	Departure	171	Through	0
		Right	155			Right	173
	Eastbound	Left	106	Approach	1,092	Left	112
		Through	467	Departure	1,108	Through	1,025
		Right	0			Right	0
	Westbound	Left	0	Approach	978	Left	0
		Through	385	Departure	1,181	Through	936
		Right	32			Right	58

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume		Forecast TM Volume	
8	Tippecanoe Avenue and E Mill Street						
	A.M. Peak Hour						
	Northbound	Left	189	Approach	1,383	Left	375
		Through	665	Departure	1,815	Through	958
		Right	49			Right	46
	Southbound	Left	12	Approach	1,846	Left	10
		Through	870	Departure	1,188	Through	1,424
		Right	246			Right	415
	Eastbound	Left	129	Approach	649	Left	228
		Through	37	Departure	799	Through	43
		Right	160			Right	379
	Westbound	Left	12	Approach	23	Left	12
		Through	9	Departure	98	Through	9
		Right	2			Right	2
	P.M. Peak Hour						
	Northbound	Left	102	Approach	1,918	Left	328
		Through	1,059	Departure	1,985	Through	1,575
		Right	8			Right	9
	Southbound	Left	5	Approach	1,758	Left	3
		Through	904	Departure	2,061	Through	1,357
		Right	193			Right	403
	Eastbound	Left	284	Approach	1,104	Left	485
		Through	4	Departure	746	Through	5
		Right	232			Right	615
	Westbound	Left	14	Approach	28	Left	12
		Through	12	Departure	17	Through	15
		Right	2			Right	1

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume		Forecast TM Volume	
9	Lena Road and Project North Driveway						
	A.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Southbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Eastbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Westbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	P.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Southbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Eastbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Westbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume		Forecast TM Volume	
10	Lena Road and Project Central Driveway						
	A.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Southbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Eastbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Westbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	P.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Southbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Eastbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Westbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume		Forecast TM Volume	
11	Lena Road and Project South Driveway						
	A.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Southbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Eastbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Westbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	P.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Southbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Eastbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0
	Westbound	Left	0	Approach	0	Left	0
		Through	0	Departure	0	Through	0
		Right	0			Right	0

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
0	0						
	A.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	P.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
0	0						
	A.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	P.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
0	0						
	A.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	P.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
0	0						
	A.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	P.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
0	0						
	A.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	P.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
0	0						
	A.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	P.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
0	0						
	A.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	P.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!

Table B-7 - Calculation of Future Turning Movement Volumes
(Based on NCHRP 255)

	Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
0	0						
	A.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	P.M. Peak Hour						
	Northbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Southbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Eastbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!
	Westbound	Left	0	Approach	0	Left	#REF!
		Through	0	Departure	0	Through	#REF!
		Right	0			Right	#REF!

Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	2040 W/O Project Project PCE	Trips PCE	2040 With Project PCE	2040 W/O Project Project PCE	Trips PCE	2040 With Project PCE
1 . I-215 SB Ramps and Inland Center Drive						
NBL	0	0	0	1	0	1
NBT	513	0	513	567	0	567
NBR	395	0	395	397	0	397
SBL	447	11	458	630	25	655
SBT	673	0	673	692	0	692
SBR	0	0	0	0	0	0
EBL	205	0	205	268	0	268
EBT	420	0	420	526	0	526
EBR	405	0	405	369	0	369
WBL	0	0	0	0	0	0
WBT	0	0	0	0	0	0
WBR	34	0	34	17	0	17
North Leg						
Approach	1,120	11	1,131	1,322	25	1,347
Departure	752	0	752	852	0	852
Total	1,872	11	1,883	2,174	25	2,199
South Leg						
Approach	908	0	908	965	0	965
Departure	1,078	0	1,078	1,061	0	1,061
Total	1,986	0	1,986	2,026	0	2,026
East Leg						
Approach	34	0	34	17	0	17
Departure	1,262	11	1,273	1,553	25	1,578
Total	1,296	11	1,307	1,570	25	1,595
West Leg						
Approach	1,030	0	1,030	1,163	0	1,163
Departure	0	0	0	1	0	1
Total	1,030	0	1,030	1,164	0	1,164
Total Approaches						
Approach	3,092	11	3,103	3,467	25	3,492
Departure	3,092	11	3,103	3,467	25	3,492
Total	6,184	22	6,206	6,934	50	6,984

Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	2040 W/O Project		2040	2040 W/O Project		2040
	Project PCE	Trips PCE	With Project PCE	Project PCE	Trips PCE	With Project PCE
2 . I-215 NB Ramps and Inland Center Drive						
NBL	297	0	297	294	0	294
NBT	442	0	442	541	0	541
NBR	0	0	0	0	0	0
SBL	0	0	0	0	0	0
SBT	632	11	643	883	25	908
SBR	91	0	91	352	0	352
EBL	0	0	0	0	0	0
EBT	0	0	0	0	0	0
EBR	0	0	0	0	0	0
WBL	499	0	499	428	0	428
WBT	670	0	670	616	0	616
WBR	955	22	977	652	11	663
North Leg						
Approach	723	11	734	1,235	25	1,260
Departure	1,397	22	1,419	1,193	11	1,204
Total	2,120	33	2,153	2,428	36	2,464
South Leg						
Approach	739	0	739	835	0	835
Departure	1,131	11	1,142	1,311	25	1,336
Total	1,870	11	1,881	2,146	25	2,171
East Leg						
Approach	2,124	22	2,146	1,696	11	1,707
Departure	0	0	0	0	0	0
Total	2,124	22	2,146	1,696	11	1,707
West Leg						
Approach	0	0	0	0	0	0
Departure	1,058	0	1,058	1,262	0	1,262
Total	1,058	0	1,058	1,262	0	1,262
Total Approaches						
Approach	3,586	33	3,619	3,766	36	3,802
Departure	3,586	33	3,619	3,766	36	3,802
Total	7,172	66	7,238	7,532	72	7,604

Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	2040 W/O Project		2040	2040 W/O Project		2040
	Project PCE	Trips PCE	With Project PCE	Project PCE	Trips PCE	With Project PCE
3 . I-215 NB Ramps and Mill Street						
NBL	293	0	293	264	0	264
NBT	3	0	3	7	0	7
NBR	114	0	114	186	0	186
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	0	0	0	0	0
EBL	671	0	671	805	0	805
EBT	1,413	17	1,430	969	8	977
EBR	0	0	0	0	0	0
WBL	0	0	0	0	0	0
WBT	452	0	452	834	0	834
WBR	283	8	291	865	18	883
North Leg						
Approach	0	0	0	0	0	0
Departure	957	8	965	1,677	18	1,695
Total	957	8	965	1,677	18	1,695
South Leg						
Approach	410	0	410	457	0	457
Departure	0	0	0	0	0	0
Total	410	0	410	457	0	457
East Leg						
Approach	735	8	743	1,699	18	1,717
Departure	1,527	17	1,544	1,155	8	1,163
Total	2,262	25	2,287	2,854	26	2,880
West Leg						
Approach	2,084	17	2,101	1,774	8	1,782
Departure	745	0	745	1,098	0	1,098
Total	2,829	17	2,846	2,872	8	2,880
Total Approaches						
Approach	3,229	25	3,254	3,930	26	3,956
Departure	3,229	25	3,254	3,930	26	3,956
Total	6,458	50	6,508	7,860	52	7,912

Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour					PM Peak Hour				
	Cumulative W/O Proj Volumes	Yr. 2018 to 2040 Growth	2040 Without Project	Project Trips	2040 With Project	Yr. 2016 W/O Proj Volumes	Yr. 2018 to 2040 Growth	2040 Without Project	Project Trips	2040 With Project
4 . S E Street/ Inland Center Dr/ W Mill St										
NBHL	12	5	17	0	17	47	21	68	0	68
NBL	52	23	75	0	75	223	97	320	0	320
NBT	159	70	229	0	229	282	123	405	0	405
NBR	70	31	101	0	101	122	53	175	0	175
SBL	39	17	56	0	56	29	13	42	0	42
SBT	171	75	246	0	246	232	101	333	0	333
SBR	61	27	88	0	88	67	29	96	0	96
SBBR	35	15	50	0	50	60	26	86	0	86
EBL	103	45	148	0	148	79	35	114	0	114
EBT	598	261	859	17	876	504	220	724	8	732
EBR	61	27	88	0	88	71	31	102	0	102
EBHR	0	0	0	0	0	2	1	3	0	3
WBL	63	28	91	0	91	110	48	158	0	158
WBBL	229	100	329	22	351	346	151	497	11	508
WBT	457	200	657	8	665	652	285	937	18	955
WBR	14	6	20	0	20	16	7	23	0	23
NEHL	4	2	6	0	6	13	6	19	0	19
NEBL	110	48	158	0	158	123	54	177	0	177
NEBR	314	137	451	22	473	317	139	456	11	467
NEHR	47	21	68	0	68	94	41	135	0	135
North Leg										
Approach	306	134	440	0	440	388	169	557	0	557
Departure	386	169	555	0	555	500	219	719	0	719
Total	692	303	995	0	995	888	388	1,276	0	1,276
South Leg										
Approach	293	129	422	0	422	674	294	968	0	968
Departure	342	151	493	0	493	507	221	728	0	728
Total	635	280	915	0	915	1,181	515	1,696	0	1,696
East Leg										
Approach	763	334	1,097	30	1,127	1,124	491	1,615	29	1,644
Departure	1,021	446	1,467	39	1,506	972	425	1,397	19	1,416
Total	1,784	780	2,564	69	2,633	2,096	916	3,012	48	3,060
West Leg										
Approach	762	333	1,095	17	1,112	656	287	943	8	951
Departure	574	252	826	8	834	955	417	1,372	18	1,390
Total	1,336	585	1,921	25	1,946	1,611	704	2,315	26	2,341
Southwest Leg										
Approach	475	208	683	22	705	547	240	787	11	798
Departure	276	120	396	22	418	455	199	654	11	665
Total	751	328	1,079	44	1,123	1,002	439	1,441	22	1,463
Total Approaches										
Approach	2,599	1,138	3,737	69	3,806	3,389	1,481	4,870	48	4,918
Departure	2,599	1,138	3,737	69	3,806	3,389	1,481	4,870	48	4,918
Total	5,198	2,276	7,474	138	7,612	6,778	2,962	9,740	96	9,836

Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	2040 W/O Project Project PCE	Trips PCE	2040 With Project PCE	2040 W/O Project Project PCE	Trips PCE	2040 With Project PCE
5 . S Arrowhead Avenue and W Mill Street						
NBL	102	0	102	265	0	265
NBT	231	0	231	382	0	382
NBR	76	0	76	122	0	122
SBL	59	0	59	52	0	52
SBT	234	0	234	405	0	405
SBR	55	0	55	102	0	102
EBL	92	0	92	95	0	95
EBT	1,479	39	1,518	1,232	18	1,250
EBR	314	0	314	131	0	131
WBL	114	0	114	112	0	112
WBT	912	18	930	1,267	43	1,310
WBR	41	0	41	49	0	49
North Leg						
Approach	348	0	348	559	0	559
Departure	364	0	364	526	0	526
Total	712	0	712	1,085	0	1,085
South Leg						
Approach	409	0	409	769	0	769
Departure	662	0	662	648	0	648
Total	1,071	0	1,071	1,417	0	1,417
East Leg						
Approach	1,067	18	1,085	1,428	43	1,471
Departure	1,614	39	1,653	1,406	18	1,424
Total	2,681	57	2,738	2,834	61	2,895
West Leg						
Approach	1,885	39	1,924	1,458	18	1,476
Departure	1,069	18	1,087	1,634	43	1,677
Total	2,954	57	3,011	3,092	61	3,153
Total Approaches						
Approach	3,709	57	3,766	4,214	61	4,275
Departure	3,709	57	3,766	4,214	61	4,275
Total	7,418	114	7,532	8,428	122	8,550

Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	2040 W/O Project Project PCE	Trips PCE	2040 With Project PCE	2040 W/O Project Project PCE	Trips PCE	2040 With Project PCE
6 . S Waterman Avenue and E Mill Street						
NBL	193	0	193	263	0	263
NBT	772	0	772	873	0	873
NBR	140	3	143	136	2	138
SBL	211	2	213	212	1	213
SBT	763	0	763	1,089	0	1,089
SBR	243	0	243	137	0	137
EBL	159	0	159	302	0	302
EBT	972	39	1,011	865	18	883
EBR	221	0	221	292	0	292
WBL	169	2	171	222	4	226
WBT	659	18	677	938	43	981
WBR	106	1	107	249	2	251
North Leg						
Approach	1,217	2	1,219	1,438	1	1,439
Departure	1,037	1	1,038	1,424	2	1,426
Total	2,254	3	2,257	2,862	3	2,865
South Leg						
Approach	1,105	3	1,108	1,272	2	1,274
Departure	1,153	2	1,155	1,603	4	1,607
Total	2,258	5	2,263	2,875	6	2,881
East Leg						
Approach	934	21	955	1,409	49	1,458
Departure	1,323	44	1,367	1,213	21	1,234
Total	2,257	65	2,322	2,622	70	2,692
West Leg						
Approach	1,352	39	1,391	1,459	18	1,477
Departure	1,095	18	1,113	1,338	43	1,381
Total	2,447	57	2,504	2,797	61	2,858
Total Approaches						
Approach	4,608	65	4,673	5,578	70	5,648
Departure	4,608	65	4,673	5,578	70	5,648
Total	9,216	130	9,346	11,156	140	11,296

Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	2040 W/O Project Project PCE	Trips PCE	2040 With Project PCE	2040 W/O Project Project PCE	Trips PCE	2040 With Project PCE
7 . Lena Road and E Mill Street						
NBL	0	0	0	0	0	0
NBT	0	0	0	0	0	0
NBR	0	0	0	0	0	0
SBL	67	6	73	165	15	180
SBT	0	0	0	0	0	0
SBR	194	21	215	176	49	225
EBL	214	44	258	174	21	195
EBT	1,019	0	1,019	1,086	0	1,086
EBR	0	0	0	0	0	0
WBL	0	0	0	0	0	0
WBT	705	0	705	1,038	0	1,038
WBR	117	14	131	62	6	68
North Leg						
Approach	261	27	288	341	64	405
Departure	331	58	389	236	27	263
Total	592	85	677	577	91	668
South Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
East Leg						
Approach	822	14	836	1,100	6	1,106
Departure	1,086	6	1,092	1,251	15	1,266
Total	1,908	20	1,928	2,351	21	2,372
West Leg						
Approach	1,233	44	1,277	1,260	21	1,281
Departure	899	21	920	1,214	49	1,263
Total	2,132	65	2,197	2,474	70	2,544
Total Approaches						
Approach	2,316	85	2,401	2,701	91	2,792
Departure	2,316	85	2,401	2,701	91	2,792
Total	4,632	170	4,802	5,402	182	5,584

Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	2040 W/O Project Project PCE	Trips PCE	2040 With Project PCE	2040 W/O Project Project PCE	Trips PCE	2040 With Project PCE
8 . Tippecanoe Avenue and E Mill Street						
NBL	423	13	436	386	6	392
NBT	1,010	0	1,010	1,606	0	1,606
NBR	161	0	161	18	0	18
SBL	22	0	22	10	0	10
SBT	1,494	0	1,494	1,392	0	1,392
SBR	425	1	426	409	1	410
EBL	239	1	240	492	1	493
EBT	86	0	86	10	0	10
EBR	436	6	442	649	14	663
WBL	30	0	30	39	0	39
WBT	26	0	26	30	0	30
WBR	2	0	2	3	0	3
North Leg						
Approach	1,941	1	1,942	1,811	1	1,812
Departure	1,251	1	1,252	2,101	1	2,102
Total	3,192	2	3,194	3,912	2	3,914
South Leg						
Approach	1,594	13	1,607	2,010	6	2,016
Departure	1,960	6	1,966	2,080	14	2,094
Total	3,554	19	3,573	4,090	20	4,110
East Leg						
Approach	58	0	58	72	0	72
Departure	269	0	269	38	0	38
Total	327	0	327	110	0	110
West Leg						
Approach	761	7	768	1,151	15	1,166
Departure	874	14	888	825	7	832
Total	1,635	21	1,656	1,976	22	1,998
Total Approaches						
Approach	4,354	21	4,375	5,044	22	5,066
Departure	4,354	21	4,375	5,044	22	5,066
Total	8,708	42	8,750	10,088	44	10,132

Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	2040 W/O Project		2040	2040 W/O Project		2040
	Project PCE	Trips PCE	With Project PCE	Project PCE	Trips PCE	With Project PCE
9 . Lena Road and Project North Driveway						
NBL		0	0		0	0
NBT	331	0	331	236	0	236
NBR		20	20		10	10
SBL		1	1		0	0
SBT	261	0	261	341	0	341
SBR		0	0		0	0
EBL		0	0		0	0
EBT		0	0		0	0
EBR		0	0		0	0
WBL		10	10		22	22
WBT		0	0		0	0
WBR		0	0		1	1
North Leg						
Approach	261	1	262	341	0	341
Departure	331	0	331	236	1	237
Total	592	1	593	577	1	578
South Leg						
Approach	331	20	351	236	10	246
Departure	261	10	271	341	22	363
Total	592	30	622	577	32	609
East Leg						
Approach	0	10	10	0	23	23
Departure	0	21	21	0	10	10
Total	0	31	31	0	33	33
West Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
Total Approaches						
Approach	592	31	623	577	33	610
Departure	592	31	623	577	33	610
Total	1,184	62	1,246	1,154	66	1,220

Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	2040 W/O Project		2040	2040 W/O Project		2040
	Project PCE	Trips PCE	With Project PCE	Project PCE	Trips PCE	With Project PCE
10 . Lena Road and Project Central Driveway						
NBL		0	0		0	0
NBT		20	20	236	10	246
NBR		10	10		5	5
SBL		0	0		0	0
SBT		10	10	341	22	363
SBR		0	0		0	0
EBL		0	0		0	0
EBT		0	0		0	0
EBR		0	0		0	0
WBL		5	5		11	11
WBT		0	0		0	0
WBR		0	0		0	0
North Leg						
Approach	0	10	10	341	22	363
Departure	0	20	20	236	10	246
Total	0	30	30	577	32	609
South Leg						
Approach	0	30	30	236	15	251
Departure	0	15	15	341	33	374
Total	0	45	45	577	48	625
East Leg						
Approach	0	5	5	0	11	11
Departure	0	10	10	0	5	5
Total	0	15	15	0	16	16
West Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
Total Approaches						
Approach	0	45	45	577	48	625
Departure	0	45	45	577	48	625
Total	0	90	90	1,154	96	1,250

Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	2040 W/O Project		2040	2040 W/O Project		2040
	Project PCE	Trips PCE	With Project PCE	Project PCE	Trips PCE	With Project PCE
11 . Lena Road and Project South Driveway						
NBL		0	0		0	0
NBT	0	30	30	236	15	251
NBR		29	29		14	14
SBL		0	0		0	0
SBT	0	14	14	341	33	374
SBR		0	0		0	0
EBL		0	0		0	0
EBT		0	0		0	0
EBR		0	0		0	0
WBL		14	14		32	32
WBT		0	0		0	0
WBR		0	0		0	0
North Leg						
Approach	0	14	14	341	33	374
Departure	0	30	30	236	15	251
Total	0	44	44	577	48	625
South Leg						
Approach	0	59	59	236	29	265
Departure	0	28	28	341	65	406
Total	0	87	87	577	94	671
East Leg						
Approach	0	14	14	0	32	32
Departure	0	29	29	0	14	14
Total	0	43	43	0	46	46
West Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
Total Approaches						
Approach	0	87	87	577	94	671
Departure	0	87	87	577	94	671
Total	0	174	174	1,154	188	1,342

APPENDIX C:
LEVEL OF SERVICE WORKSHEETS

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	300	265	0	0	0	0	332	248	162	456	0
Future Volume (veh/h)	151	300	265	0	0	0	0	332	248	162	456	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800				0	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	176	349	308				0	386	288	188	530	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	934	1038	882				0	887	414	304	1334	0
Arrive On Green	0.58	0.58	0.58				0.00	0.27	0.27	0.10	0.39	0.00
Sat Flow, veh/h	1619	1800	1530				0	3438	1530	2956	3510	0
Grp Volume(v), veh/h	176	349	308				0	386	288	188	530	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1530				0	1638	1530	1478	1710	0
Q Serve(g_s), s	6.2	12.2	12.8				0.0	11.7	20.3	7.3	13.4	0.0
Cycle Q Clear(g_c), s	6.2	12.2	12.8				0.0	11.7	20.3	7.3	13.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	934	1038	882				0	887	414	304	1334	0
V/C Ratio(X)	0.19	0.34	0.35				0.00	0.44	0.70	0.62	0.40	0.00
Avail Cap(c_a), veh/h	934	1038	882				0	1160	542	727	2109	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.89	0.89	0.00
Uniform Delay (d), s/veh	12.1	13.3	13.5				0.0	36.2	39.3	51.6	26.4	0.0
Incr Delay (d2), s/veh	0.4	0.9	1.1				0.0	0.3	2.6	1.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	6.3	5.7				0.0	5.3	8.9	3.1	6.4	0.0
LnGrp Delay(d),s/veh	12.5	14.2	14.6				0.0	36.5	41.9	53.4	26.6	0.0
LnGrp LOS	B	B	B					D	D	D	C	
Approach Vol, veh/h		833						674			718	
Approach Delay, s/veh		14.0						38.8			33.6	
Approach LOS		B						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			14.3	34.5		71.2		48.8
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			9.3	22.3		14.8		15.4
Green Ext Time (p_c), s			0.5	7.7		4.9		10.8

Intersection Summary	
HCM 2010 Ctrl Delay	27.8
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.36	2.14	2.62	2.68
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	833	0	674	718
Effct. Green for Bike (s)	75.5	0.0	23.1	40.5
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1258	0	385	675
Bicycle Delay (s/bike)	8.3	0.0	39.1	26.3
Bicycle Compliance	Good		Poor	Fair
Bicycle LOS Score	3.64	0.00	2.38	3.02
Bicycle LOS	D		B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	358	264	454	179	322	0	0	279	22
Future Volume (veh/h)	0	0	0	358	264	454	179	322	0	0	279	22
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1700	1800	1800	1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h				448	508	449	224	402	0	0	349	28
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1030	1145	973	281	1130	0	0	828	65
Arrive On Green				0.64	0.64	0.64	0.17	0.33	0.00	0.00	0.14	0.14
Sat Flow, veh/h				1619	1800	1530	1619	3510	0	0	6152	462
Grp Volume(v), veh/h				448	508	449	224	402	0	0	273	104
Grp Sat Flow(s),veh/h/ln				1619	1800	1530	1619	1710	0	0	1548	1718
Q Serve(g_s), s				16.7	17.2	18.1	15.9	10.7	0.0	0.0	6.4	6.7
Cycle Q Clear(g_c), s				16.7	17.2	18.1	15.9	10.7	0.0	0.0	6.4	6.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.27
Lane Grp Cap(c), veh/h				1030	1145	973	281	1130	0	0	652	241
V/C Ratio(X)				0.43	0.44	0.46	0.80	0.36	0.00	0.00	0.42	0.43
Avail Cap(c_a), veh/h				1030	1145	973	398	2109	0	0	1645	609
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.80	0.80	0.00	0.00	0.64	0.64
Uniform Delay (d), s/veh				11.0	11.1	11.2	47.6	30.5	0.0	0.0	47.1	47.2
Incr Delay (d2), s/veh				1.3	1.2	1.6	6.0	0.2	0.0	0.0	0.3	0.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.8	8.9	8.0	7.6	5.0	0.0	0.0	2.8	3.2
LnGrp Delay(d),s/veh				12.3	12.3	12.8	53.5	30.6	0.0	0.0	47.4	48.0
LnGrp LOS				B	B	B	D	C			D	D
Approach Vol, veh/h					1405			626			377	
Approach Delay, s/veh					12.5			38.8			47.6	
Approach LOS					B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		78.3		41.7			22.8	18.8
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		39.5		71.5			27.0	40.0
Max Q Clear Time (g_c+I1), s		20.1		12.7			17.9	8.7
Green Ext Time (p_c), s		6.5		6.0			0.4	5.7

Intersection Summary	
HCM 2010 Ctrl Delay	24.8
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	106.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.15	2.40	2.50	2.58
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	1346	626	377
Effct. Green for Bike (s)	0.0	75.0	41.0	15.2
Cross Street Width (ft)	75.9	106.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	1250	683	253
Bicycle Delay (s/bike)	0.0	8.4	26.0	45.8
Bicycle Compliance		Good	Fair	Poor
Bicycle LOS Score	0.00	5.41	2.67	2.36
Bicycle LOS		F	B	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	441	754	0	0	328	160	192	2	80	0	0	0
Future Volume (veh/h)	441	754	0	0	328	160	192	2	80	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	474	811	0	0	353	172	234	0	58			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	531	1788	0	0	875	272	1438	0	679			
Arrive On Green	0.33	0.52	0.00	0.00	0.18	0.18	0.44	0.00	0.44			
Sat Flow, veh/h	1619	3510	0	0	5076	1530	3238	0	1530			
Grp Volume(v), veh/h	474	811	0	0	353	172	234	0	58			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1638	1530	1619	0	1530			
Q Serve(g_s), s	33.4	17.8	0.0	0.0	7.6	12.5	5.2	0.0	2.6			
Cycle Q Clear(g_c), s	33.4	17.8	0.0	0.0	7.6	12.5	5.2	0.0	2.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	531	1788	0	0	875	272	1438	0	679			
V/C Ratio(X)	0.89	0.45	0.00	0.00	0.40	0.63	0.16	0.00	0.09			
Avail Cap(c_a), veh/h	863	2565	0	0	983	306	1438	0	679			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.96	0.96	1.00	0.00	1.00			
Uniform Delay (d), s/veh	38.3	17.9	0.0	0.0	43.7	45.7	20.0	0.0	19.3			
Incr Delay (d2), s/veh	7.2	0.2	0.0	0.0	0.3	3.3	0.2	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	15.9	8.4	0.0	0.0	3.5	5.6	2.4	0.0	1.2			
LnGrp Delay(d),s/veh	45.5	18.1	0.0	0.0	44.0	49.0	20.2	0.0	19.5			
LnGrp LOS	D	B			D	D	C		B			
Approach Vol, veh/h		1285			525			292				
Approach Delay, s/veh		28.2			45.6			20.1				
Approach LOS		C			D			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		55.3		64.7			41.4	23.4
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		23.5		87.5			61.5	21.5
Max Q Clear Time (g_c+I1), s		7.2		19.8			35.4	14.5
Green Ext Time (p_c), s		0.9		12.0			1.5	4.4

Intersection Summary	
HCM 2010 Ctrl Delay	31.4
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.77	2.60	2.06	2.05
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1285	525	294	0
Effct. Green for Bike (s)	64.8	17.1	51.2	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1080	285	853	0
Bicycle Delay (s/bike)	12.7	44.1	19.7	0.0
Bicycle Compliance	Fair	Poor	Fair	
Bicycle LOS Score	3.20	2.24	3.15	0.00
Bicycle LOS	C	B	C	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	125.4	73.1	103.0	63.0	96.6
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	7	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.79	2.76	2.57	2.29	2.84
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	721	755	263	254	473
Effct. Green for Bike (s)	50.0	53.6	20.5	20.5	15.0
Cross Street Width (ft)	96.6	63.0	73.1	125.4	103.0
Through Lanes Number	1	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	833	893	342	342	250
Bicycle Delay (s/bike)	20.4	18.4	41.3	41.3	45.9
Bicycle Compliance	Fair	Fair	Poor	Poor	Poor
Bicycle LOS Score	4.23	3.15	3.11	3.69	3.92
Bicycle LOS	D	C	C	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	723	171	64	509	27	67	152	50	38	170	39
Future Volume (veh/h)	59	723	171	64	509	27	67	152	50	38	170	39
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	68	831	197	74	585	31	77	175	57	44	195	45
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	410	1508	358	204	1816	96	467	1067	337	471	1157	261
Arrive On Green	0.18	0.18	0.18	0.55	0.55	0.55	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	774	2745	651	526	3304	175	1094	2559	808	1102	2773	626
Grp Volume(v), veh/h	68	518	510	74	302	314	77	115	117	44	119	121
Grp Sat Flow(s),veh/h/ln	774	1710	1685	526	1710	1769	1094	1710	1657	1102	1710	1689
Q Serve(g_s), s	9.2	33.0	33.0	14.2	11.6	11.6	5.7	5.0	5.3	3.1	5.2	5.4
Cycle Q Clear(g_c), s	20.9	33.0	33.0	47.3	11.6	11.6	11.1	5.0	5.3	8.4	5.2	5.4
Prop In Lane	1.00		0.39	1.00		0.10	1.00		0.49	1.00		0.37
Lane Grp Cap(c), veh/h	410	940	926	204	940	972	467	713	691	471	713	705
V/C Ratio(X)	0.17	0.55	0.55	0.36	0.32	0.32	0.16	0.16	0.17	0.09	0.17	0.17
Avail Cap(c_a), veh/h	488	1112	1095	257	1112	1150	467	713	691	471	713	705
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.62	0.62	0.62	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	35.6	35.6	36.8	14.8	14.8	25.5	21.9	21.9	24.6	21.9	22.0
Incr Delay (d2), s/veh	0.1	0.3	0.3	0.9	0.2	0.2	0.8	0.5	0.5	0.4	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	15.8	15.6	2.1	5.5	5.7	1.8	2.5	2.5	1.0	2.6	2.6
LnGrp Delay(d),s/veh	35.9	36.0	36.0	37.7	15.0	15.0	26.2	22.3	22.5	25.0	22.4	22.5
LnGrp LOS	D	D	D	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1096			690			309			284	
Approach Delay, s/veh		36.0			17.4			23.4			22.8	
Approach LOS		D			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		52.0		68.0		52.0		68.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		35.5		75.5		35.5		75.5
Max Q Clear Time (g_c+I1), s		13.1		35.0		10.4		49.3
Green Ext Time (p_c), s		3.2		17.4		3.3		14.2

Intersection Summary	
HCM 2010 Ctrl Delay	27.4
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.67	2.64	2.47	2.43
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1096	690	309	284
Effct. Green for Bike (s)	52.6	52.6	63.4	63.4
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	877	877	1057	1057
Bicycle Delay (s/bike)	18.9	18.9	13.3	13.3
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	3.38	3.05	2.91	2.90
Bicycle LOS	C	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	485	166	142	339	77	141	495	111	104	566	110
Future Volume (veh/h)	104	485	166	142	339	77	141	495	111	104	566	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	122	571	195	167	399	91	166	582	131	122	666	129
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	178	812	363	227	916	410	222	1796	397	178	1734	332
Arrive On Green	0.11	0.24	0.24	0.05	0.09	0.09	0.14	0.45	0.45	0.11	0.42	0.42
Sat Flow, veh/h	1619	3420	1530	1619	3420	1530	1619	4029	890	1619	4144	792
Grp Volume(v), veh/h	122	571	195	167	399	91	166	471	242	122	525	270
Grp Sat Flow(s),veh/h/ln	1619	1710	1530	1619	1710	1530	1619	1638	1643	1619	1638	1660
Q Serve(g_s), s	8.7	18.3	13.4	12.2	13.3	6.6	11.8	11.2	11.5	8.7	13.3	13.6
Cycle Q Clear(g_c), s	8.7	18.3	13.4	12.2	13.3	6.6	11.8	11.2	11.5	8.7	13.3	13.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.54	1.00		0.48
Lane Grp Cap(c), veh/h	178	812	363	227	916	410	222	1460	732	178	1371	695
V/C Ratio(X)	0.69	0.70	0.54	0.74	0.44	0.22	0.75	0.32	0.33	0.69	0.38	0.39
Avail Cap(c_a), veh/h	290	983	440	290	983	440	290	1460	732	290	1371	695
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	0.83	0.83	0.83	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	41.9	40.0	55.0	46.1	43.1	49.8	21.5	21.6	51.4	24.2	24.2
Incr Delay (d2), s/veh	3.2	1.2	0.9	5.9	0.3	0.2	7.4	0.6	1.2	4.6	0.8	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	8.8	5.7	5.9	6.3	2.8	5.8	5.2	5.4	4.1	6.1	6.5
LnGrp Delay(d),s/veh	54.6	43.1	40.8	60.9	46.4	43.3	57.2	22.1	22.8	56.0	25.0	25.9
LnGrp LOS	D	D	D	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		888			657			879			917	
Approach Delay, s/veh		44.2			49.6			28.9			29.4	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	55.5	18.8	30.5	18.5	52.2	15.2	34.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	32.0	19.0	32.0	19.0	32.0	19.0	32.0
Max Q Clear Time (g_c+I1), s	10.7	13.5	14.2	20.3	13.8	15.6	10.7	15.3
Green Ext Time (p_c), s	0.2	9.7	0.2	5.7	0.2	9.0	0.2	6.9

Intersection Summary	
HCM 2010 Ctrl Delay	37.2
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.73	2.72	2.88	2.85
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	888	657	879	917
Effct. Green for Bike (s)	29.2	31.4	47.4	45.0
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	487	523	790	750
Bicycle Delay (s/bike)	34.4	32.7	22.0	23.4
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.59	3.40	3.14	3.17
Bicycle LOS	D	C	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	164	432	332	81	54	127
Future Volume (veh/h)	164	432	332	81	54	127
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1600	1800
Adj Flow Rate, veh/h	193	508	391	95	64	149
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	354	1182	680	304	946	1901
Arrive On Green	0.13	0.35	0.20	0.20	0.62	0.62
Sat Flow, veh/h	1619	3510	3510	1530	1524	3060
Grp Volume(v), veh/h	193	508	391	95	64	149
Grp Sat Flow(s),veh/h/ln	1619	1710	1710	1530	1524	1530
Q Serve(g_s), s	10.6	13.7	12.4	6.4	2.0	2.3
Cycle Q Clear(g_c), s	10.6	13.7	12.4	6.4	2.0	2.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	354	1182	680	304	946	1901
V/C Ratio(X)	0.55	0.43	0.57	0.31	0.07	0.08
Avail Cap(c_a), veh/h	629	2337	1254	561	946	1901
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.90	0.90	1.00	1.00
Uniform Delay (d), s/veh	30.3	30.2	43.5	41.1	9.0	9.1
Incr Delay (d2), s/veh	0.9	0.2	0.7	0.5	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	6.5	5.9	2.7	0.9	3.4
LnGrp Delay(d),s/veh	31.2	30.4	44.2	41.6	9.1	9.1
LnGrp LOS	C	C	D	D	A	A
Approach Vol, veh/h		701	486		213	
Approach Delay, s/veh		30.6	43.7		9.1	
Approach LOS		C	D		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				43.5		76.5	17.6	25.9
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				79.5		31.5	33.5	41.5
Max Q Clear Time (g_c+I1), s				15.7		4.3	12.6	14.4
Green Ext Time (p_c), s				7.8		0.7	0.5	7.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.9
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.56	2.41	2.42
Pedestrian Crosswalk LOS	B	B	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	701	486	213
Effct. Green for Bike (s)	45.4	22.4	70.6
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	757	373	1177
Bicycle Delay (s/bike)	23.2	39.7	10.2
Bicycle Compliance	Fair	Poor	Fair
Bicycle LOS Score	3.06	2.90	2.65
Bicycle LOS	C	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	74	184	20	17	2	213	701	106	14	913	252
Future Volume (veh/h)	135	74	184	20	17	2	213	701	106	14	913	252
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	118	132	209	23	19	2	242	797	120	16	1038	286
Adj No. of Lanes	1	1	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	240	267	507	86	181	81	297	2996	448	62	1877	1067
Arrive On Green	0.15	0.15	0.15	0.05	0.05	0.05	0.18	0.69	0.69	0.04	0.55	0.55
Sat Flow, veh/h	1619	1800	1530	1619	3420	1530	1619	4316	646	1619	3420	1530
Grp Volume(v), veh/h	118	132	209	23	19	2	242	604	313	16	1038	286
Grp Sat Flow(s),veh/h/ln	1619	1800	1530	1619	1710	1530	1619	1638	1686	1619	1710	1530
Q Serve(g_s), s	8.0	8.1	12.7	1.6	0.6	0.1	17.2	8.3	8.4	1.2	23.6	8.4
Cycle Q Clear(g_c), s	8.0	8.1	12.7	1.6	0.6	0.1	17.2	8.3	8.4	1.2	23.6	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	240	267	507	86	181	81	297	2274	1170	62	1877	1067
V/C Ratio(X)	0.49	0.49	0.41	0.27	0.11	0.02	0.82	0.27	0.27	0.26	0.55	0.27
Avail Cap(c_a), veh/h	277	308	542	277	584	261	351	2274	1170	101	1877	1067
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	47.0	31.0	54.6	54.1	53.9	47.1	6.9	6.9	56.1	17.5	6.8
Incr Delay (d2), s/veh	1.5	1.4	0.5	1.7	0.3	0.1	12.1	0.3	0.6	2.2	1.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	4.1	5.4	0.8	0.3	0.1	8.7	3.8	4.0	0.6	11.4	5.4
LnGrp Delay(d),s/veh	48.4	48.3	31.6	56.3	54.4	54.0	59.1	7.2	7.5	58.3	18.7	7.4
LnGrp LOS	D	D	C	E	D	D	E	A	A	E	B	A
Approach Vol, veh/h		459			44			1159			1340	
Approach Delay, s/veh		40.7			55.3			18.1			16.8	
Approach LOS		D			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.6	85.3		19.8	24.0	67.9		8.3
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.0	61.0		18.0	23.5	42.5		18.0
Max Q Clear Time (g_c+I1), s	3.2	10.4		14.7	19.2	25.6		3.6
Green Ext Time (p_c), s	0.0	25.1		0.6	0.3	12.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	21.5
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.51	2.37	2.87	2.93
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	446	44	1159	1340
Effct. Green for Bike (s)	16.8	9.8	86.5	64.1
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	280	163	1442	1068
Bicycle Delay (s/bike)	44.4	50.6	4.7	13.0
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	3.41	2.90	3.12	3.60
Bicycle LOS	C	C	C	D

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	0	245	0	0	181
Future Vol, veh/h	0	0	245	0	0	181
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	258	0	0	191

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	353	129	0	0	258	0
Stage 1	258	-	-	-	-	-
Stage 2	95	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	624	903	-	-	1318	-
Stage 1	767	-	-	-	-	-
Stage 2	924	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	624	903	-	-	1318	-
Mov Cap-2 Maneuver	624	-	-	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	924	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1318	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	300	265	0	0	0	0	332	248	162	456	0
Future Volume (vph)	151	300	265	0	0	0	0	332	248	162	456	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0						2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91						0.91		0.97	0.95	
Frt	1.00	0.93						0.94		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1470	3048						4599		2949	3420	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1470	3048						4599		2949	3420	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	176	349	308	0	0	0	0	386	288	188	530	0
RTOR Reduction (vph)	0	72	0	0	0	0	0	141	0	0	0	0
Lane Group Flow (vph)	158	603	0	0	0	0	0	533	0	188	530	0
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6											
Actuated Green, G (s)	72.9	72.9						20.6		13.0	38.1	
Effective Green, g (s)	75.4	75.4						23.1		15.5	40.6	
Actuated g/C Ratio	0.63	0.63						0.19		0.13	0.34	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	923	1915						885		380	1157	
v/s Ratio Prot								c0.12		c0.06	0.15	
v/s Ratio Perm	0.11	0.20										
v/c Ratio	0.17	0.31						0.60		0.49	0.46	
Uniform Delay, d1	9.3	10.3						44.3		48.6	31.1	
Progression Factor	1.00	1.00						1.00		1.29	1.03	
Incremental Delay, d2	0.4	0.4						1.2		1.0	0.3	
Delay (s)	9.7	10.8						45.4		63.7	32.2	
Level of Service	A	B						D		E	C	
Approach Delay (s)		10.6			0.0			45.4			40.4	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Inland Center Drive & I-215 NB On Ramp/I-215 NB Off Ramp

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	358	264	454	179	322	0	0	279	22
Future Volume (vph)	0	0	0	358	264	454	179	322	0	0	279	22
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.95	0.85	1.00	1.00			0.99	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1615	1633	1454	1615	3420			6123	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1615	1633	1454	1615	3420			6123	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	0	0	0	448	330	568	224	402	0	0	349	28
RTOR Reduction (vph)	0	0	0	0	8	160	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	448	465	266	224	403	0	0	363	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				72.5	72.5	72.5	21.3	38.5			12.7	
Effective Green, g (s)				75.0	75.0	75.0	23.8	41.0			15.2	
Actuated g/C Ratio				0.62	0.62	0.62	0.20	0.34			0.13	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				1009	1020	908	320	1168			775	
v/s Ratio Prot					c0.28		c0.14	0.12			c0.06	
v/s Ratio Perm				0.28		0.18						
v/c Ratio				0.44	0.46	0.29	0.70	0.35			0.47	
Uniform Delay, d1				11.7	11.8	10.3	44.8	29.5			48.6	
Progression Factor				1.00	1.00	1.00	1.56	0.79			0.58	
Incremental Delay, d2				1.4	1.5	0.8	6.4	0.2			0.4	
Delay (s)				13.1	13.3	11.2	76.4	23.5			28.7	
Level of Service				B	B	B	E	C			C	
Approach Delay (s)		0.0			12.5			42.4			28.7	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: I-215 NB Off Ramp/I-215 NB On Ramp & W Mill Street

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	441	754	0	0	328	160	192	2	80	0	0	0
Future Volume (vph)	441	754	0	0	328	160	192	2	80	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4914	1530	1534	1548	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4914	1530	1534	1548	1454			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	474	811	0	0	353	172	206	2	86	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	147	0	2	44	0	0	0
Lane Group Flow (vph)	474	811	0	0	353	25	109	106	33	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	43.2	62.3			14.6	14.6	48.7	48.7	48.7			
Effective Green, g (s)	45.7	64.8			17.1	17.1	51.2	51.2	51.2			
Actuated g/C Ratio	0.38	0.54			0.14	0.14	0.43	0.43	0.43			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	615	1846			700	218	654	660	620			
v/s Ratio Prot	c0.29	c0.24			0.07							
v/s Ratio Perm						0.02	c0.07	0.07	0.02			
v/c Ratio	0.77	0.44			0.50	0.11	0.17	0.16	0.05			
Uniform Delay, d1	32.6	16.6			47.5	44.8	21.2	21.2	20.2			
Progression Factor	1.00	1.00			0.78	2.80	1.00	1.00	1.00			
Incremental Delay, d2	5.9	0.2			0.6	0.2	0.5	0.5	0.2			
Delay (s)	38.5	16.8			37.6	125.9	21.8	21.7	20.3			
Level of Service	D	B			D	F	C	C	C			
Approach Delay (s)		24.8			66.5			21.4			0.0	
Approach LOS		C			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: Inland Center Drive & S E Street & W Mill Street

10/30/2016

Movement	EBL	EBT	EBR	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	59	532	58	59	206	401	13	11	49	112	66	37
Future Volume (vph)	59	532	58	59	206	401	13	11	49	112	66	37
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800	1800	1800	1600	1800	1800	1700
Total Lost time (s)	2.0	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	1.00	1.00		0.97	0.95			0.97	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	1615	1800	1530		2949	3404			2949	1800	1530	1615
Flt Permitted	0.95	1.00	1.00		0.95	1.00			0.95	1.00	1.00	0.95
Satd. Flow (perm)	1615	1800	1530		2949	3404			2949	1800	1530	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	66	591	64	66	229	446	14	12	54	124	73	41
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	50	0
Lane Group Flow (vph)	66	591	64	0	295	460	0	0	66	124	23	41
Turn Type	Prot	NA	Prot	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot
Protected Phases	7	4	4	3	3	8		5	5	2	3	1
Permitted Phases											2	
Actuated Green, G (s)	10.9	47.5	47.5		14.5	51.1			5.0	18.0	32.5	5.0
Effective Green, g (s)	13.4	50.0	50.0		17.0	53.6			7.5	20.5	37.5	7.5
Actuated g/C Ratio	0.11	0.42	0.42		0.14	0.45			0.06	0.17	0.31	0.06
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5			4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	180	750	637		417	1520			184	307	503	100
v/s Ratio Prot	0.04	c0.33	0.04		c0.10	0.14			0.02	c0.07	0.01	c0.03
v/s Ratio Perm											0.01	
v/c Ratio	0.37	0.79	0.10		0.71	0.30			0.36	0.40	0.05	0.41
Uniform Delay, d1	49.4	30.4	21.3		49.1	21.2			53.9	44.3	28.8	54.1
Progression Factor	0.77	1.25	1.07		0.74	1.55			1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	8.0	0.3		9.6	0.5			5.4	3.9	0.2	12.0
Delay (s)	43.5	46.1	23.2		45.8	33.4			59.3	48.2	28.9	66.1
Level of Service	D	D	C		D	C			E	D	C	E
Approach Delay (s)		43.8				38.3				45.7		
Approach LOS		D				D				D		

Intersection Summary			
HCM 2000 Control Delay	45.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations							
Traffic Volume (vph)	131	27	33	4	104	274	44
Future Volume (vph)	131	27	33	4	104	274	44
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1800	1800
Total Lost time (s)	2.0			2.0	2.0	2.0	
Lane Util. Factor	0.95			1.00	1.00	0.88	
Frt	0.95			1.00	1.00	0.85	
Flt Protected	1.00			0.95	0.95	1.00	
Satd. Flow (prot)	3259			1520	1520	2693	
Flt Permitted	1.00			0.95	0.95	1.00	
Satd. Flow (perm)	3259			1520	1520	2693	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	146	30	37	4	116	304	49
RTOR Reduction (vph)	15	0	0	0	0	119	0
Lane Group Flow (vph)	198	0	0	4	116	234	0
Turn Type	NA			Prot	Prot	Perm	
Protected Phases	6			9	9		
Permitted Phases						9	
Actuated Green, G (s)	18.0			12.5	12.5	12.5	
Effective Green, g (s)	20.5			15.0	15.0	15.0	
Actuated g/C Ratio	0.17			0.12	0.12	0.12	
Clearance Time (s)	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	556			190	190	336	
v/s Ratio Prot	0.06			0.00	0.08		
v/s Ratio Perm						c0.09	
v/c Ratio	0.36			0.02	0.61	0.70	
Uniform Delay, d1	43.9			46.1	49.7	50.3	
Progression Factor	1.00			0.92	0.92	0.88	
Incremental Delay, d2	1.8			0.2	13.3	11.0	
Delay (s)	45.7			42.7	59.1	55.3	
Level of Service	D			D	E	E	
Approach Delay (s)	49.0				56.2		
Approach LOS	D				E		

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: S Arrowhead Avenue & W Mill Street/E Mill Street

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	723	171	64	509	27	67	152	50	38	170	39
Future Volume (vph)	59	723	171	64	509	27	67	152	50	38	170	39
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3322		1615	3394		1615	3294		1615	3324	
Flt Permitted	0.32	1.00		0.14	1.00		0.58	1.00		0.59	1.00	
Satd. Flow (perm)	538	3322		231	3394		988	3294		998	3324	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	68	831	197	74	585	31	77	175	57	44	195	45
RTOR Reduction (vph)	0	28	0	0	5	0	0	18	0	0	11	0
Lane Group Flow (vph)	68	1000	0	74	611	0	77	214	0	44	229	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	50.1	50.1		50.1	50.1		60.9	60.9		60.9	60.9	
Effective Green, g (s)	52.6	52.6		52.6	52.6		63.4	63.4		63.4	63.4	
Actuated g/C Ratio	0.44	0.44		0.44	0.44		0.53	0.53		0.53	0.53	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	235	1456		101	1487		521	1740		527	1756	
v/s Ratio Prot		0.30			0.18			0.06			0.07	
v/s Ratio Perm	0.13			c0.32			c0.08			0.04		
v/c Ratio	0.29	0.69		0.73	0.41		0.15	0.12		0.08	0.13	
Uniform Delay, d1	21.7	27.1		27.9	23.1		14.5	14.3		14.0	14.3	
Progression Factor	0.42	0.50		0.96	0.86		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	1.0		21.9	0.2		0.6	0.1		0.3	0.2	
Delay (s)	9.7	14.6		48.5	20.0		15.1	14.4		14.3	14.5	
Level of Service	A	B		D	B		B	B		B	B	
Approach Delay (s)		14.3			23.0			14.6			14.5	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	485	166	142	339	77	141	495	111	104	566	110
Future Volume (vph)	104	485	166	142	339	77	141	495	111	104	566	110
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3420	1530	1615	3420	1530	1615	4779		1615	4794	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1615	3420	1530	1615	3420	1530	1615	4779		1615	4794	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	122	571	195	167	399	91	166	582	131	122	666	129
RTOR Reduction (vph)	0	0	148	0	0	67	0	25	0	0	21	0
Lane Group Flow (vph)	122	571	47	167	399	24	166	688	0	122	774	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	14.1	26.7	26.7	16.3	28.9	28.9	16.5	44.9		14.1	42.5	
Effective Green, g (s)	16.6	29.2	29.2	18.8	31.4	31.4	19.0	47.4		16.6	45.0	
Actuated g/C Ratio	0.14	0.24	0.24	0.16	0.26	0.26	0.16	0.39		0.14	0.38	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	223	832	372	253	894	400	255	1887		223	1797	
v/s Ratio Prot	0.08	c0.17		c0.10	0.12		c0.10	0.14		0.08	c0.16	
v/s Ratio Perm			0.03			0.02						
v/c Ratio	0.55	0.69	0.13	0.66	0.45	0.06	0.65	0.36		0.55	0.43	
Uniform Delay, d1	48.2	41.2	35.5	47.6	37.0	33.2	47.4	25.7		48.2	28.0	
Progression Factor	0.63	1.19	4.72	0.86	1.33	3.90	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.5	2.2	0.1	6.2	0.4	0.1	5.8	0.5		2.7	0.8	
Delay (s)	33.1	51.4	167.3	47.3	49.8	129.7	53.2	26.2		50.9	28.7	
Level of Service	C	D	F	D	D	F	D	C		D	C	
Approach Delay (s)		74.4			60.2			31.3			31.7	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	48.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	164	432	332	81	54	127
Future Volume (vph)	164	432	332	81	54	127
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.92	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.98	1.00
Satd. Flow (prot)	1615	3420	3420	1530	2789	1392
Flt Permitted	0.25	1.00	1.00	1.00	0.98	1.00
Satd. Flow (perm)	428	3420	3420	1530	2789	1392
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	193	508	391	95	64	149
RTOR Reduction (vph)	0	0	0	77	31	30
Lane Group Flow (vph)	193	508	391	18	108	44
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	42.9	42.9	19.9	19.9	68.1	68.1
Effective Green, g (s)	45.4	45.4	22.4	22.4	70.6	70.6
Actuated g/C Ratio	0.38	0.38	0.19	0.19	0.59	0.59
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	369	1293	638	285	1640	818
v/s Ratio Prot	c0.09	0.15	c0.11		c0.04	
v/s Ratio Perm	0.11			0.01		0.03
v/c Ratio	0.52	0.39	0.61	0.06	0.07	0.05
Uniform Delay, d1	27.2	27.2	44.8	40.2	10.6	10.5
Progression Factor	1.13	1.14	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.2	1.8	0.1	0.1	0.1
Delay (s)	32.0	31.2	46.6	40.2	10.7	10.6
Level of Service	C	C	D	D	B	B
Approach Delay (s)		31.4	45.3		10.6	
Approach LOS		C	D		B	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	74	184	20	17	2	213	701	106	14	913	252
Future Volume (vph)	135	74	184	20	17	2	213	701	106	14	913	252
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1534	1684	1530	1615	3420	1530	1615	4818		1615	3420	1530
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1534	1684	1530	1615	3420	1530	1615	4818		1615	3420	1530
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	153	84	209	23	19	2	242	797	120	16	1038	286
RTOR Reduction (vph)	0	0	133	0	0	2	0	6	0	0	0	97
Lane Group Flow (vph)	116	121	76	23	19	0	242	911	0	16	1038	189
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	16.3	16.3	43.3	5.1	5.1	5.1	27.0	90.3		3.3	66.6	82.9
Effective Green, g (s)	18.8	18.8	48.3	7.6	7.6	7.6	29.5	92.8		5.8	69.1	87.9
Actuated g/C Ratio	0.14	0.14	0.36	0.06	0.06	0.06	0.22	0.70		0.04	0.52	0.66
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	216	238	555	92	195	87	358	3361		70	1776	1034
v/s Ratio Prot	c0.08	0.07	0.03	c0.01	0.01		c0.15	0.19		0.01	c0.30	0.03
v/s Ratio Perm			0.02			0.00						0.10
v/c Ratio	0.54	0.51	0.14	0.25	0.10	0.00	0.68	0.27		0.23	0.58	0.18
Uniform Delay, d1	53.1	52.8	28.4	60.0	59.4	59.1	47.4	7.5		61.4	22.0	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.6	1.7	0.1	1.4	0.2	0.0	5.0	0.2		1.7	1.4	0.1
Delay (s)	55.6	54.5	28.5	61.4	59.7	59.1	52.4	7.7		63.1	23.5	8.8
Level of Service	E	D	C	E	E	E	D	A		E	C	A
Approach Delay (s)		42.6			60.5			17.0			20.8	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	133.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	328	288	0	0	0	1	432	236	389	534	0
Future Volume (veh/h)	214	328	288	0	0	0	1	432	236	389	534	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800				1800	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	230	353	310				1	465	254	418	574	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	810	901	766				31	883	374	535	1594	0
Arrive On Green	0.50	0.50	0.50				0.27	0.27	0.27	0.18	0.47	0.00
Sat Flow, veh/h	1619	1800	1530				1	3287	1392	2956	3510	0
Grp Volume(v), veh/h	230	353	310				255	211	254	418	574	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1530				1798	1491	1392	1478	1710	0
Q Serve(g_s), s	9.9	14.6	15.2				0.0	14.5	19.6	16.2	12.9	0.0
Cycle Q Clear(g_c), s	9.9	14.6	15.2				14.5	14.5	19.6	16.2	12.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	810	901	766				513	400	374	535	1594	0
V/C Ratio(X)	0.28	0.39	0.40				0.50	0.53	0.68	0.78	0.36	0.00
Avail Cap(c_a), veh/h	810	901	766				667	528	493	727	2109	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	1.00	0.82	0.82	0.00
Uniform Delay (d), s/veh	17.4	18.6	18.8				37.4	37.4	39.3	46.9	20.6	0.0
Incr Delay (d2), s/veh	0.9	1.3	1.6				0.7	1.1	2.4	3.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	7.6	6.7				7.3	6.1	7.8	6.9	6.1	0.0
LnGrp Delay(d),s/veh	18.3	19.9	20.4				38.1	38.5	41.7	50.1	20.7	0.0
LnGrp LOS	B	B	C				D	D	D	D	C	
Approach Vol, veh/h		893						720			992	
Approach Delay, s/veh		19.7						39.5			33.1	
Approach LOS		B						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			23.7	34.2		62.1		57.9
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			18.2	21.6		17.2		14.9
Green Ext Time (p_c), s			1.0	8.1		5.0		11.3

Intersection Summary	
HCM 2010 Ctrl Delay	30.2
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.37	2.24	2.63	2.75
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	893	0	720	992
Effct. Green for Bike (s)	62.8	0.0	26.7	53.2
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1047	0	445	887
Bicycle Delay (s/bike)	13.6	0.0	36.3	18.6
Bicycle Compliance	Fair		Poor	Fair
Bicycle LOS Score	3.69	0.00	2.40	3.25
Bicycle LOS	D		B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	271	290	336	214	432	0	0	646	191
Future Volume (veh/h)	0	0	0	271	290	336	214	432	0	0	646	191
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1700	1800	1800	1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h				277	331	320	218	441	0	0	659	195
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				872	969	824	275	1465	0	0	1168	332
Arrive On Green				0.54	0.54	0.54	0.17	0.43	0.00	0.00	0.24	0.24
Sat Flow, veh/h				1619	1800	1530	1619	3510	0	0	5083	1371
Grp Volume(v), veh/h				277	331	320	218	441	0	0	632	222
Grp Sat Flow(s),veh/h/ln				1619	1800	1530	1619	1710	0	0	1548	1558
Q Serve(g_s), s				11.4	12.5	14.7	15.5	10.2	0.0	0.0	14.3	15.1
Cycle Q Clear(g_c), s				11.4	12.5	14.7	15.5	10.2	0.0	0.0	14.3	15.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.88
Lane Grp Cap(c), veh/h				872	969	824	275	1465	0	0	1123	377
V/C Ratio(X)				0.32	0.34	0.39	0.79	0.30	0.00	0.00	0.56	0.59
Avail Cap(c_a), veh/h				872	969	824	398	2109	0	0	1645	552
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.79	0.79	0.00	0.00	0.46	0.46
Uniform Delay (d), s/veh				15.4	15.7	16.2	47.8	22.5	0.0	0.0	39.9	40.2
Incr Delay (d2), s/veh				1.0	1.0	1.4	5.4	0.1	0.0	0.0	0.2	0.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.3	6.4	6.4	7.4	4.8	0.0	0.0	6.2	6.5
LnGrp Delay(d),s/veh				16.4	16.6	17.6	53.2	22.6	0.0	0.0	40.1	40.9
LnGrp LOS				B	B	B	D	C			D	D
Approach Vol, veh/h					928			659			854	
Approach Delay, s/veh					16.9			32.7			40.3	
Approach LOS					B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		66.6		53.4			22.4	31.0
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		39.5		71.5			27.0	40.0
Max Q Clear Time (g_c+I1), s		16.7		12.2			17.5	17.1
Green Ext Time (p_c), s		4.0		12.1			0.4	9.4

Intersection Summary	
HCM 2010 Ctrl Delay	29.4
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	106.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.19	2.26	2.54	2.64
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	916	659	854
Effct. Green for Bike (s)	0.0	63.9	52.1	26.6
Cross Street Width (ft)	75.9	106.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	1065	868	443
Bicycle Delay (s/bike)	0.0	13.1	19.2	36.3
Bicycle Compliance		Fair	Fair	Poor
Bicycle LOS Score	0.00	4.70	2.70	2.55
Bicycle LOS		E	B	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	528	710	0	0	571	455	239	5	75	0	0	0
Future Volume (veh/h)	528	710	0	0	571	455	239	5	75	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	562	755	0	0	607	484	281	0	55			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	616	2305	0	0	1360	423	948	0	448			
Arrive On Green	0.38	0.67	0.00	0.00	0.28	0.28	0.29	0.00	0.29			
Sat Flow, veh/h	1619	3510	0	0	5076	1530	3238	0	1530			
Grp Volume(v), veh/h	562	755	0	0	607	484	281	0	55			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1638	1530	1619	0	1530			
Q Serve(g_s), s	39.5	11.1	0.0	0.0	12.2	33.2	8.1	0.0	3.2			
Cycle Q Clear(g_c), s	39.5	11.1	0.0	0.0	12.2	33.2	8.1	0.0	3.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	616	2305	0	0	1360	423	948	0	448			
V/C Ratio(X)	0.91	0.33	0.00	0.00	0.45	1.14	0.30	0.00	0.12			
Avail Cap(c_a), veh/h	796	2685	0	0	1360	423	948	0	448			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.82	0.82	1.00	0.00	1.00			
Uniform Delay (d), s/veh	35.3	8.2	0.0	0.0	35.8	43.4	32.9	0.0	31.1			
Incr Delay (d2), s/veh	12.4	0.1	0.0	0.0	0.2	85.6	0.8	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	19.8	5.3	0.0	0.0	5.5	24.1	3.7	0.0	1.4			
LnGrp Delay(d),s/veh	47.7	8.3	0.0	0.0	36.0	129.0	33.7	0.0	31.7			
LnGrp LOS	D	A			D	F	C		C			
Approach Vol, veh/h		1317			1091			336				
Approach Delay, s/veh		25.1			77.3			33.3				
Approach LOS		C			E			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		37.1		82.9			47.7	35.2
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		19.3		91.7			56.5	30.7
Max Q Clear Time (g_c+I1), s		10.1		13.1			41.5	35.2
Green Ext Time (p_c), s		0.8		18.5			1.7	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.8
HCM 2010 LOS	D

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.83	2.70	2.07	2.25
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1317	1091	339	0
Effct. Green for Bike (s)	79.6	27.2	36.4	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1327	453	607	0
Bicycle Delay (s/bike)	6.8	35.9	29.1	0.0
Bicycle Compliance	Good	Poor	Fair	
Bicycle LOS Score	3.22	2.55	3.23	0.00
Bicycle LOS	C	B	C	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	125.4	73.1	103.0	63.0	96.6
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	7	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.83	2.80	2.67	2.36	2.87
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	619	1073	671	368	544
Effct. Green for Bike (s)	39.2	49.8	27.3	20.5	14.4
Cross Street Width (ft)	96.6	63.0	73.1	125.4	103.0
Through Lanes Number	1	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	653	830	455	342	240
Bicycle Delay (s/bike)	27.2	20.5	35.8	41.3	46.5
Bicycle Compliance	Fair	Fair	Poor	Poor	Poor
Bicycle LOS Score	4.06	3.41	3.79	3.78	4.03
Bicycle LOS	D	C	D	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	689	111	74	782	39	143	267	71	36	266	66
Future Volume (veh/h)	63	689	111	74	782	39	143	267	71	36	266	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	68	749	121	80	850	42	155	290	77	39	289	72
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	242	1423	230	212	1600	79	473	1301	339	470	1319	323
Arrive On Green	0.16	0.16	0.16	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	598	2950	476	611	3317	164	979	2685	701	974	2724	668
Grp Volume(v), veh/h	68	434	436	80	438	454	155	183	184	39	180	181
Grp Sat Flow(s),veh/h/ln	598	1710	1716	611	1710	1771	979	1710	1676	974	1710	1682
Q Serve(g_s), s	12.7	28.0	28.0	13.6	21.4	21.4	13.0	7.4	7.6	2.9	7.3	7.5
Cycle Q Clear(g_c), s	34.2	28.0	28.0	41.6	21.4	21.4	20.5	7.4	7.6	10.5	7.3	7.5
Prop In Lane	1.00		0.28	1.00		0.09	1.00		0.42	1.00		0.40
Lane Grp Cap(c), veh/h	242	825	828	212	825	854	473	828	812	470	828	815
V/C Ratio(X)	0.28	0.53	0.53	0.38	0.53	0.53	0.33	0.22	0.23	0.08	0.22	0.22
Avail Cap(c_a), veh/h	272	912	915	243	912	945	473	828	812	470	828	815
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.63	0.63	0.63	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	37.9	37.9	38.9	21.6	21.6	23.8	17.9	17.9	21.0	17.8	17.9
Incr Delay (d2), s/veh	0.4	0.3	0.3	0.7	0.4	0.3	1.8	0.6	0.6	0.3	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	13.4	13.4	2.3	10.2	10.5	3.8	3.6	3.7	0.8	3.6	3.6
LnGrp Delay(d),s/veh	50.9	38.2	38.2	39.7	22.0	22.0	25.7	18.5	18.6	21.3	18.4	18.5
LnGrp LOS	D	D	D	D	C	C	C	B	B	C	B	B
Approach Vol, veh/h		938			972			522			400	
Approach Delay, s/veh		39.1			23.4			20.6			18.8	
Approach LOS		D			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		60.1		59.9		60.1		59.9
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		49.5		61.5		49.5		61.5
Max Q Clear Time (g_c+I1), s		22.5		36.2		12.5		43.6
Green Ext Time (p_c), s		5.8		14.8		6.1		11.8

Intersection Summary	
HCM 2010 Ctrl Delay	27.5
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.71	2.68	2.52	2.48
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	938	972	522	400
Effct. Green for Bike (s)	45.0	45.0	71.0	71.0
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	750	750	1183	1183
Bicycle Delay (s/bike)	23.4	23.4	10.0	10.0
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	3.25	3.28	3.09	2.99
Bicycle LOS	C	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	441	185	165	521	102	165	666	102	116	702	104
Future Volume (veh/h)	156	441	185	165	521	102	165	666	102	116	702	104
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	166	469	197	176	554	109	176	709	109	123	747	111
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	222	801	358	236	831	372	232	1906	290	179	1774	262
Arrive On Green	0.14	0.23	0.23	0.05	0.08	0.08	0.14	0.44	0.44	0.11	0.41	0.41
Sat Flow, veh/h	1619	3420	1530	1619	3420	1530	1619	4305	656	1619	4326	638
Grp Volume(v), veh/h	166	469	197	176	554	109	176	538	280	123	564	294
Grp Sat Flow(s),veh/h/ln	1619	1710	1530	1619	1710	1530	1619	1638	1684	1619	1638	1687
Q Serve(g_s), s	11.8	14.6	13.6	12.9	18.9	8.1	12.5	13.1	13.3	8.8	14.7	14.9
Cycle Q Clear(g_c), s	11.8	14.6	13.6	12.9	18.9	8.1	12.5	13.1	13.3	8.8	14.7	14.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		0.38
Lane Grp Cap(c), veh/h	222	801	358	236	831	372	232	1450	746	179	1344	692
V/C Ratio(X)	0.75	0.59	0.55	0.75	0.67	0.29	0.76	0.37	0.38	0.69	0.42	0.42
Avail Cap(c_a), veh/h	290	983	440	290	983	440	290	1450	746	290	1344	692
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.70	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	40.8	40.4	54.9	50.5	45.5	49.4	22.3	22.3	51.4	25.2	25.3
Incr Delay (d2), s/veh	5.3	0.5	0.9	6.5	1.1	0.3	8.7	0.7	1.4	4.6	1.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	7.0	5.8	6.2	9.1	3.5	6.2	6.0	6.5	4.2	6.8	7.3
LnGrp Delay(d),s/veh	55.1	41.3	41.3	61.4	51.6	45.8	58.1	23.0	23.8	56.0	26.2	27.2
LnGrp LOS	E	D	D	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		832			839			994			981	
Approach Delay, s/veh		44.0			52.9			29.5			30.2	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	55.1	19.5	30.1	19.2	51.2	18.5	31.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	32.0	19.0	32.0	19.0	32.0	19.0	32.0
Max Q Clear Time (g_c+I1), s	10.8	15.3	14.9	16.6	14.5	16.9	13.8	20.9
Green Ext Time (p_c), s	0.2	10.0	0.2	7.0	0.2	9.3	0.2	5.8

Intersection Summary	
HCM 2010 Ctrl Delay	38.4
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.75	2.72	2.91	2.89
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	832	839	994	981
Effct. Green for Bike (s)	27.9	28.3	48.3	45.4
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	465	472	805	757
Bicycle Delay (s/bike)	35.3	35.0	21.4	23.2
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.54	3.55	3.21	3.20
Bicycle LOS	D	D	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	114	495	427	34	95	158
Future Volume (veh/h)	114	495	427	34	95	158
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1600	1800
Adj Flow Rate, veh/h	130	562	485	39	96	193
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	306	1185	800	358	945	1898
Arrive On Green	0.10	0.35	0.23	0.23	0.62	0.62
Sat Flow, veh/h	1619	3510	3510	1530	1524	3060
Grp Volume(v), veh/h	130	562	485	39	96	193
Grp Sat Flow(s),veh/h/ln	1619	1710	1710	1530	1524	1530
Q Serve(g_s), s	6.8	15.4	15.2	2.4	3.1	3.1
Cycle Q Clear(g_c), s	6.8	15.4	15.2	2.4	3.1	3.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	306	1185	800	358	945	1898
V/C Ratio(X)	0.43	0.47	0.61	0.11	0.10	0.10
Avail Cap(c_a), veh/h	501	2252	1454	650	945	1898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.96	0.96	1.00	1.00
Uniform Delay (d), s/veh	29.3	30.7	41.0	36.1	9.2	9.2
Incr Delay (d2), s/veh	0.7	0.2	0.7	0.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	7.3	7.3	1.0	1.3	4.4
LnGrp Delay(d),s/veh	30.1	30.9	41.7	36.2	9.4	9.3
LnGrp LOS	C	C	D	D	A	A
Approach Vol, veh/h		692	524		289	
Approach Delay, s/veh		30.7	41.3		9.4	
Approach LOS		C	D		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				43.6		76.4	13.5	30.1
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				76.5		34.5	23.5	48.5
Max Q Clear Time (g_c+I1), s				17.4		5.1	8.8	17.2
Green Ext Time (p_c), s				9.2		1.0	0.3	8.4

Intersection Summary	
HCM 2010 Ctrl Delay	30.3
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.59	2.44	2.41
Pedestrian Crosswalk LOS	B	B	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	692	524	288
Effct. Green for Bike (s)	44.0	25.9	72.0
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	733	432	1200
Bicycle Delay (s/bike)	24.1	36.9	9.6
Bicycle Compliance	Fair	Poor	Good
Bicycle LOS Score	3.05	2.93	2.72
Bicycle LOS	C	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	288	8	245	25	24	2	120	1080	16	7	927	196
Future Volume (veh/h)	288	8	245	25	24	2	120	1080	16	7	927	196
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	333	0	278	28	27	2	136	1227	18	8	1053	223
Adj No. of Lanes	2	0	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	619	0	474	91	192	86	192	3269	48	50	1941	1161
Arrive On Green	0.19	0.00	0.19	0.06	0.06	0.06	0.12	0.66	0.66	0.03	0.57	0.57
Sat Flow, veh/h	3238	0	1530	1619	3420	1530	1619	4990	73	1619	3420	1530
Grp Volume(v), veh/h	333	0	278	28	27	2	136	806	439	8	1053	223
Grp Sat Flow(s),veh/h/ln	1619	0	1530	1619	1710	1530	1619	1638	1787	1619	1710	1530
Q Serve(g_s), s	11.1	0.0	18.4	2.0	0.9	0.1	9.7	13.5	13.5	0.6	23.1	4.9
Cycle Q Clear(g_c), s	11.1	0.0	18.4	2.0	0.9	0.1	9.7	13.5	13.5	0.6	23.1	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	619	0	474	91	192	86	192	2146	1171	50	1941	1161
V/C Ratio(X)	0.54	0.00	0.59	0.31	0.14	0.02	0.71	0.38	0.38	0.16	0.54	0.19
Avail Cap(c_a), veh/h	623	0	476	277	584	261	258	2146	1171	101	1941	1161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	0.0	34.9	54.4	53.9	53.5	50.9	9.5	9.5	56.7	16.2	4.1
Incr Delay (d2), s/veh	0.9	0.0	1.8	1.9	0.3	0.1	5.7	0.5	0.9	1.5	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	8.0	0.9	0.4	0.1	4.6	6.2	6.9	0.3	11.1	3.8
LnGrp Delay(d),s/veh	44.6	0.0	36.7	56.3	54.2	53.6	56.6	10.0	10.4	58.2	17.3	4.5
LnGrp LOS	D		D	E	D	D	E	A	B	E	B	A
Approach Vol, veh/h		611			57			1381			1284	
Approach Delay, s/veh		41.0			55.2			14.7			15.3	
Approach LOS		D			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.7	80.6		25.0	16.2	70.1		8.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.0	58.4		20.6	16.6	46.8		18.0
Max Q Clear Time (g_c+I1), s	2.6	15.5		20.4	11.7	25.1		4.0
Green Ext Time (p_c), s	0.0	27.4		0.1	0.1	16.8		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.52	2.34	2.92	3.01
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	614	57	1381	1284
Effct. Green for Bike (s)	19.9	10.1	83.6	66.2
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	332	168	1393	1103
Bicycle Delay (s/bike)	41.8	50.3	5.5	12.1
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	3.69	2.91	3.24	3.55
Bicycle LOS	D	C	C	D

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	214	328	288	0	0	0	1	432	236	389	534	0
Future Volume (vph)	214	328	288	0	0	0	1	432	236	389	534	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0						2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91						0.91		0.97	0.95	
Frt	1.00	0.93						0.95		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1470	3049						4654		2949	3420	
Flt Permitted	0.95	1.00						0.94		0.95	1.00	
Satd. Flow (perm)	1470	3049						4372		2949	3420	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	230	353	310	0	0	0	1	465	254	418	574	0
RTOR Reduction (vph)	0	91	0	0	0	0	0	99	0	0	0	0
Lane Group Flow (vph)	207	595	0	0	0	0	0	621	0	418	574	0
Turn Type	Perm	NA					Perm	NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6						4					
Actuated Green, G (s)	60.3	60.3						24.2		22.0	50.7	
Effective Green, g (s)	62.8	62.8						26.7		24.5	53.2	
Actuated g/C Ratio	0.52	0.52						0.22		0.20	0.44	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	769	1595						972		602	1516	
v/s Ratio Prot										c0.14	0.17	
v/s Ratio Perm	0.14	0.20						c0.14				
v/c Ratio	0.27	0.37						0.64		0.69	0.38	
Uniform Delay, d1	15.9	16.9						42.3		44.3	22.3	
Progression Factor	1.00	1.00						1.00		1.60	0.68	
Incremental Delay, d2	0.9	0.7						1.4		3.3	0.2	
Delay (s)	16.7	17.6						43.7		74.3	15.2	
Level of Service	B	B						D		E	B	
Approach Delay (s)		17.4			0.0			43.7			40.1	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	33.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Inland Center Drive & I-215 NB On Ramp/I-215 NB Off Ramp

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	271	290	336	214	432	0	0	646	191
Future Volume (vph)	0	0	0	271	290	336	214	432	0	0	646	191
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.98	0.85	1.00	1.00			0.97	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1615	1676	1454	1615	3420			5980	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1615	1676	1454	1615	3420			5980	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	277	296	343	218	441	0	0	659	195
RTOR Reduction (vph)	0	0	0	0	3	139	0	0	0	0	54	0
Lane Group Flow (vph)	0	0	0	277	338	159	218	441	0	0	800	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				61.4	61.4	61.4	21.0	49.6			24.1	
Effective Green, g (s)				63.9	63.9	63.9	23.5	52.1			26.6	
Actuated g/C Ratio				0.53	0.53	0.53	0.20	0.43			0.22	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				859	892	774	316	1484			1325	
v/s Ratio Prot					c0.20		c0.13	0.13			c0.13	
v/s Ratio Perm				0.17		0.11						
v/c Ratio				0.32	0.38	0.21	0.69	0.30			0.60	
Uniform Delay, d1				15.8	16.4	14.7	44.9	22.1			42.0	
Progression Factor				1.00	1.00	1.00	1.51	0.86			0.86	
Incremental Delay, d2				1.0	1.2	0.6	5.8	0.1			0.7	
Delay (s)				16.8	17.6	15.3	73.7	19.1			36.7	
Level of Service				B	B	B	E	B			D	
Approach Delay (s)		0.0			16.6			37.2			36.7	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: I-215 NB Off Ramp/I-215 NB On Ramp & W Mill Street

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	528	710	0	0	571	455	239	5	75	0	0	0
Future Volume (vph)	528	710	0	0	571	455	239	5	75	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4914	1530	1534	1553	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4914	1530	1534	1553	1454			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	562	755	0	0	607	484	254	5	80	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	349	0	1	50	0	0	0
Lane Group Flow (vph)	562	755	0	0	607	135	135	131	22	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	47.9	77.1			24.7	24.7	33.9	33.9	33.9			
Effective Green, g (s)	50.4	79.6			27.2	27.2	36.4	36.4	36.4			
Actuated g/C Ratio	0.42	0.66			0.23	0.23	0.30	0.30	0.30			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	678	2268			1113	346	465	471	441			
v/s Ratio Prot	c0.35	0.22			c0.12							
v/s Ratio Perm						0.09	c0.09	0.08	0.02			
v/c Ratio	0.83	0.33			0.55	0.39	0.29	0.28	0.05			
Uniform Delay, d1	31.0	8.7			40.9	39.4	31.9	31.8	29.6			
Progression Factor	1.00	1.00			1.05	2.91	1.00	1.00	1.00			
Incremental Delay, d2	8.3	0.1			0.5	0.7	1.6	1.5	0.2			
Delay (s)	39.2	8.8			43.5	115.3	33.5	33.3	29.8			
Level of Service	D	A			D	F	C	C	C			
Approach Delay (s)		21.8			75.4			32.6			0.0	
Approach LOS		C			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	44.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	63	444	67	2	104	302	577	15	44	210	255	115
Future Volume (vph)	63	444	67	2	104	302	577	15	44	210	255	115
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1600	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0	2.0			2.0	2.0			2.0	2.0	2.0
Lane Util. Factor	1.00	1.00	1.00			0.97	0.95			0.97	1.00	1.00
Frt	1.00	1.00	0.85			1.00	1.00			1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00			0.95	1.00			0.95	1.00	1.00
Satd. Flow (prot)	1615	1800	1530			2949	3407			2949	1800	1530
Flt Permitted	0.95	1.00	1.00			0.95	1.00			0.95	1.00	1.00
Satd. Flow (perm)	1615	1800	1530			2949	3407			2949	1800	1530
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	68	477	72	2	112	325	620	16	47	226	274	124
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	73
Lane Group Flow (vph)	68	477	74	0	0	437	636	0	0	273	274	51
Turn Type	Prot	NA	Prot		Prot	Prot	NA		Prot	Prot	NA	pm+ov
Protected Phases	7	4	4		3	3	8		5	5	2	3
Permitted Phases												2
Actuated Green, G (s)	8.5	36.7	36.7			19.1	47.3			11.8	24.8	43.9
Effective Green, g (s)	11.0	39.2	39.2			21.6	49.8			14.3	27.3	48.9
Actuated g/C Ratio	0.09	0.33	0.33			0.18	0.41			0.12	0.23	0.41
Clearance Time (s)	4.5	4.5	4.5			4.5	4.5			4.5	4.5	4.5
Lane Grp Cap (vph)	148	588	499			530	1413			351	409	648
v/s Ratio Prot	0.04	c0.27	0.05			c0.15	0.19			c0.09	c0.15	0.01
v/s Ratio Perm												0.02
v/c Ratio	0.46	0.81	0.15			0.82	0.45			0.78	0.67	0.08
Uniform Delay, d1	51.7	37.0	28.6			47.4	25.3			51.3	42.2	21.8
Progression Factor	0.90	0.97	0.91			0.49	0.77			1.00	1.00	1.00
Incremental Delay, d2	9.7	11.3	0.6			12.6	0.9			15.5	8.5	0.2
Delay (s)	56.0	47.3	26.7			35.8	20.4			66.8	50.7	22.0
Level of Service	E	D	C			D	C			E	D	C
Approach Delay (s)		45.8					26.7				52.0	
Approach LOS		D					C				D	

Intersection Summary			
HCM 2000 Control Delay	41.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	27	207	51	57	12	116	288	89
Future Volume (vph)	27	207	51	57	12	116	288	89
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1600	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	
Lane Util. Factor	1.00	0.95			1.00	1.00	0.88	
Frt	1.00	0.95			1.00	1.00	0.85	
Flt Protected	0.95	1.00			0.95	0.95	1.00	
Satd. Flow (prot)	1615	3244			1520	1520	2693	
Flt Permitted	0.95	1.00			0.95	0.95	1.00	
Satd. Flow (perm)	1615	3244			1520	1520	2693	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	29	223	55	61	13	125	310	96
RTOR Reduction (vph)	0	16	0	0	0	0	192	0
Lane Group Flow (vph)	29	323	0	0	13	125	214	0
Turn Type	Prot	NA			Prot	Prot	Perm	
Protected Phases	1	6			9	9		
Permitted Phases							9	
Actuated Green, G (s)	5.0	18.0			11.9	11.9	11.9	
Effective Green, g (s)	7.5	20.5			14.4	14.4	14.4	
Actuated g/C Ratio	0.06	0.17			0.12	0.12	0.12	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	100	554			182	182	323	
v/s Ratio Prot	0.02	0.10			0.01	c0.08		
v/s Ratio Perm							0.08	
v/c Ratio	0.29	0.58			0.07	0.69	0.66	
Uniform Delay, d1	53.7	45.8			46.9	50.6	50.5	
Progression Factor	1.00	1.00			0.80	0.79	0.70	
Incremental Delay, d2	7.2	4.4			0.7	18.7	10.1	
Delay (s)	60.9	50.3			38.4	58.9	45.4	
Level of Service	E	D			D	E	D	
Approach Delay (s)		51.1				48.3		
Approach LOS		D				D		

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: S Arrowhead Avenue & W Mill Street/E Mill Street

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	689	111	74	782	39	143	267	71	36	266	66
Future Volume (vph)	63	689	111	74	782	39	143	267	71	36	266	66
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3349		1615	3396		1615	3312		1615	3318	
Flt Permitted	0.15	1.00		0.16	1.00		0.51	1.00		0.50	1.00	
Satd. Flow (perm)	247	3349		264	3396		863	3312		857	3318	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	749	121	80	850	42	155	290	77	39	289	72
RTOR Reduction (vph)	0	14	0	0	4	0	0	14	0	0	13	0
Lane Group Flow (vph)	68	856	0	80	888	0	155	353	0	39	348	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	42.5	42.5		42.5	42.5		68.5	68.5		68.5	68.5	
Effective Green, g (s)	45.0	45.0		45.0	45.0		71.0	71.0		71.0	71.0	
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.59	0.59		0.59	0.59	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	92	1255		99	1273		510	1959		507	1963	
v/s Ratio Prot		0.26			0.26			0.11			0.10	
v/s Ratio Perm	0.27			c0.30			c0.18			0.05		
v/c Ratio	0.74	0.68		0.81	0.70		0.30	0.18		0.08	0.18	
Uniform Delay, d1	32.4	31.5		33.6	31.7		12.2	11.2		10.5	11.2	
Progression Factor	0.67	0.59		1.14	1.12		1.00	1.00		1.00	1.00	
Incremental Delay, d2	19.3	1.1		33.4	1.5		1.5	0.2		0.3	0.2	
Delay (s)	41.1	19.7		71.6	37.1		13.7	11.4		10.8	11.4	
Level of Service	D	B		E	D		B	B		B	B	
Approach Delay (s)		21.3			39.9			12.1			11.3	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	441	185	165	521	102	165	666	102	116	702	104
Future Volume (vph)	156	441	185	165	521	102	165	666	102	116	702	104
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3420	1530	1615	3420	1530	1615	4816		1615	4819	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1615	3420	1530	1615	3420	1530	1615	4816		1615	4819	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	166	469	197	176	554	109	176	709	109	123	747	111
RTOR Reduction (vph)	0	0	151	0	0	73	0	14	0	0	14	0
Lane Group Flow (vph)	166	469	46	176	554	36	176	804	0	123	844	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	16.3	25.5	25.5	16.6	25.8	25.8	17.0	45.7		14.2	42.9	
Effective Green, g (s)	18.8	28.0	28.0	19.1	28.3	28.3	19.5	48.2		16.7	45.4	
Actuated g/C Ratio	0.16	0.23	0.23	0.16	0.24	0.24	0.16	0.40		0.14	0.38	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	253	798	357	257	806	360	262	1934		224	1823	
v/s Ratio Prot	0.10	0.14		c0.11	c0.16		c0.11	0.17		0.08	c0.18	
v/s Ratio Perm			0.03			0.02						
v/c Ratio	0.66	0.59	0.13	0.68	0.69	0.10	0.67	0.42		0.55	0.46	
Uniform Delay, d1	47.6	40.9	36.4	47.6	41.8	35.9	47.2	25.8		48.1	28.1	
Progression Factor	0.55	0.99	4.42	0.88	1.30	2.86	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.5	1.0	0.1	7.3	2.4	0.1	6.6	0.7		2.7	0.8	
Delay (s)	31.8	41.4	160.9	49.2	56.6	102.8	53.9	26.4		50.9	29.0	
Level of Service	C	D	F	D	E	F	D	C		D	C	
Approach Delay (s)		67.8			61.1			31.3			31.7	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	114	495	427	34	95	158
Future Volume (vph)	114	495	427	34	95	158
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.93	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.97	1.00
Satd. Flow (prot)	1615	3420	3420	1530	2817	1392
Flt Permitted	0.21	1.00	1.00	1.00	0.97	1.00
Satd. Flow (perm)	358	3420	3420	1530	2817	1392
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	130	562	485	39	108	180
RTOR Reduction (vph)	0	0	0	31	35	37
Lane Group Flow (vph)	130	563	485	8	161	55
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	41.5	41.5	23.4	23.4	69.5	69.5
Effective Green, g (s)	44.0	44.0	25.9	25.9	72.0	72.0
Actuated g/C Ratio	0.37	0.37	0.22	0.22	0.60	0.60
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	299	1254	738	330	1690	835
v/s Ratio Prot	0.06	c0.16	c0.14		c0.06	
v/s Ratio Perm	0.10			0.01		0.04
v/c Ratio	0.43	0.45	0.66	0.03	0.10	0.07
Uniform Delay, d1	27.4	28.8	43.0	37.1	10.2	10.0
Progression Factor	1.18	1.21	0.86	0.63	1.00	1.00
Incremental Delay, d2	0.9	0.2	2.1	0.0	0.1	0.2
Delay (s)	33.3	35.2	39.2	23.2	10.3	10.1
Level of Service	C	D	D	C	B	B
Approach Delay (s)		34.8	38.0		10.2	
Approach LOS		C	D		B	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	288	8	245	25	24	2	120	1080	16	7	927	196
Future Volume (vph)	288	8	245	25	24	2	120	1080	16	7	927	196
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1534	1633	1530	1615	3420	1530	1615	4903		1615	3420	1530
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1534	1633	1530	1615	3420	1530	1615	4903		1615	3420	1530
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	327	9	278	28	27	2	136	1227	18	8	1053	223
RTOR Reduction (vph)	0	0	143	0	0	2	0	1	0	0	0	65
Lane Group Flow (vph)	167	169	135	28	27	0	136	1244	0	8	1053	158
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	17.4	17.4	32.7	6.5	6.5	6.5	15.3	76.6		1.5	62.8	80.2
Effective Green, g (s)	19.9	19.9	37.7	9.0	9.0	9.0	17.8	79.1		4.0	65.3	85.2
Actuated g/C Ratio	0.17	0.17	0.31	0.08	0.08	0.08	0.15	0.66		0.03	0.54	0.71
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	254	270	480	121	256	114	239	3231		53	1861	1111
v/s Ratio Prot	c0.11	0.10	0.04	c0.02	0.01		c0.08	0.25		0.00	c0.31	0.02
v/s Ratio Perm			0.05			0.00						0.08
v/c Ratio	0.66	0.63	0.28	0.23	0.11	0.00	0.57	0.39		0.15	0.57	0.14
Uniform Delay, d1	46.9	46.6	31.0	52.2	51.7	51.3	47.5	9.3		56.4	18.0	5.6
Progression Factor	1.13	1.12	6.42	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.9	4.4	0.3	1.0	0.2	0.0	3.1	0.3		1.3	1.3	0.1
Delay (s)	58.7	56.8	199.1	53.2	51.9	51.3	50.6	9.7		57.7	19.3	5.7
Level of Service	E	E	F	D	D	D	D	A		E	B	A
Approach Delay (s)		121.7			52.5			13.7			17.1	
Approach LOS		F			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	35.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	300	265	0	0	0	0	332	248	173	456	0
Future Volume (veh/h)	151	300	265	0	0	0	0	332	248	173	456	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800				0	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	176	349	308				0	386	288	201	530	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	926	1030	875				0	887	414	317	1349	0
Arrive On Green	0.57	0.57	0.57				0.00	0.27	0.27	0.11	0.39	0.00
Sat Flow, veh/h	1619	1800	1530				0	3438	1530	2956	3510	0
Grp Volume(v), veh/h	176	349	308				0	386	288	201	530	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1530				0	1638	1530	1478	1710	0
Q Serve(g_s), s	6.3	12.3	12.9				0.0	11.7	20.3	7.8	13.3	0.0
Cycle Q Clear(g_c), s	6.3	12.3	12.9				0.0	11.7	20.3	7.8	13.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	926	1030	875				0	887	414	317	1349	0
V/C Ratio(X)	0.19	0.34	0.35				0.00	0.44	0.70	0.63	0.39	0.00
Avail Cap(c_a), veh/h	926	1030	875				0	1160	542	727	2109	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.88	0.88	0.00
Uniform Delay (d), s/veh	12.3	13.6	13.8				0.0	36.2	39.3	51.3	26.0	0.0
Incr Delay (d2), s/veh	0.5	0.9	1.1				0.0	0.3	2.6	1.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	6.4	5.7				0.0	5.3	8.9	3.3	6.3	0.0
LnGrp Delay(d),s/veh	12.8	14.5	14.9				0.0	36.5	41.9	53.2	26.2	0.0
LnGrp LOS	B	B	B					D	D	D	C	
Approach Vol, veh/h		833						674			731	
Approach Delay, s/veh		14.3						38.8			33.6	
Approach LOS		B						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			14.9	34.5		70.7		49.3
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			9.8	22.3		14.9		15.3
Green Ext Time (p_c), s			0.6	7.7		4.9		10.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.0
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.36	2.14	2.62	2.68
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	833	0	674	731
Effct. Green for Bike (s)	74.9	0.0	23.1	41.1
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1248	0	385	685
Bicycle Delay (s/bike)	8.5	0.0	39.1	25.9
Bicycle Compliance	Good		Poor	Fair
Bicycle LOS Score	3.64	0.00	2.38	3.03
Bicycle LOS	D		B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	358	264	476	179	322	0	0	290	22
Future Volume (veh/h)	0	0	0	358	264	476	179	322	0	0	290	22
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1700	1800	1800	1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h				448	529	462	224	402	0	0	362	28
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1026	1140	969	281	1139	0	0	846	64
Arrive On Green				0.63	0.63	0.63	0.17	0.33	0.00	0.00	0.14	0.14
Sat Flow, veh/h				1619	1800	1530	1619	3510	0	0	6169	448
Grp Volume(v), veh/h				448	529	462	224	402	0	0	282	108
Grp Sat Flow(s),veh/h/ln				1619	1800	1530	1619	1710	0	0	1548	1721
Q Serve(g_s), s				16.8	18.3	19.0	15.9	10.7	0.0	0.0	6.7	6.9
Cycle Q Clear(g_c), s				16.8	18.3	19.0	15.9	10.7	0.0	0.0	6.7	6.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.26
Lane Grp Cap(c), veh/h				1026	1140	969	281	1139	0	0	664	246
V/C Ratio(X)				0.44	0.46	0.48	0.80	0.35	0.00	0.00	0.43	0.44
Avail Cap(c_a), veh/h				1026	1140	969	398	2109	0	0	1645	610
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.80	0.80	0.00	0.00	0.62	0.62
Uniform Delay (d), s/veh				11.1	11.4	11.5	47.6	30.2	0.0	0.0	46.9	47.0
Incr Delay (d2), s/veh				1.4	1.4	1.7	6.0	0.1	0.0	0.0	0.3	0.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.9	9.4	8.4	7.6	5.0	0.0	0.0	2.9	3.3
LnGrp Delay(d),s/veh				12.5	12.8	13.2	53.5	30.4	0.0	0.0	47.2	47.8
LnGrp LOS				B	B	B	D	C			D	D
Approach Vol, veh/h					1439			626			390	
Approach Delay, s/veh					12.8			38.7			47.4	
Approach LOS					B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		78.0		42.0			22.8	19.1
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		39.5		71.5			27.0	40.0
Max Q Clear Time (g_c+I1), s		21.0		12.7			17.9	8.9
Green Ext Time (p_c), s		6.6		6.1			0.4	5.8

Intersection Summary	
HCM 2010 Ctrl Delay	24.9
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	106.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.15	2.41	2.50	2.59
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	1373	626	390
Effct. Green for Bike (s)	0.0	74.7	41.3	15.4
Cross Street Width (ft)	75.9	106.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	1245	688	257
Bicycle Delay (s/bike)	0.0	8.6	25.8	45.6
Bicycle Compliance		Good	Fair	Poor
Bicycle LOS Score	0.00	5.46	2.67	2.36
Bicycle LOS		F	B	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	441	771	0	0	328	168	192	2	80	0	0	0
Future Volume (veh/h)	441	771	0	0	328	168	192	2	80	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	474	829	0	0	353	181	234	0	58			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	531	1799	0	0	891	277	1427	0	674			
Arrive On Green	0.33	0.53	0.00	0.00	0.18	0.18	0.44	0.00	0.44			
Sat Flow, veh/h	1619	3510	0	0	5076	1530	3238	0	1530			
Grp Volume(v), veh/h	474	829	0	0	353	181	234	0	58			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1638	1530	1619	0	1530			
Q Serve(g_s), s	33.4	18.2	0.0	0.0	7.6	13.2	5.2	0.0	2.6			
Cycle Q Clear(g_c), s	33.4	18.2	0.0	0.0	7.6	13.2	5.2	0.0	2.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	531	1799	0	0	891	277	1427	0	674			
V/C Ratio(X)	0.89	0.46	0.00	0.00	0.40	0.65	0.16	0.00	0.09			
Avail Cap(c_a), veh/h	863	2565	0	0	983	306	1427	0	674			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.96	0.96	1.00	0.00	1.00			
Uniform Delay (d), s/veh	38.3	17.8	0.0	0.0	43.3	45.6	20.2	0.0	19.5			
Incr Delay (d2), s/veh	7.2	0.2	0.0	0.0	0.3	4.1	0.2	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	15.9	8.6	0.0	0.0	3.5	5.9	2.4	0.0	1.2			
LnGrp Delay(d),s/veh	45.5	18.0	0.0	0.0	43.6	49.7	20.5	0.0	19.8			
LnGrp LOS	D	B			D	D	C		B			
Approach Vol, veh/h		1303			534			292				
Approach Delay, s/veh		28.0			45.7			20.3				
Approach LOS		C			D			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		54.9		65.1			41.4	23.8
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		23.5		87.5			61.5	21.5
Max Q Clear Time (g_c+I1), s		7.2		20.2			35.4	15.2
Green Ext Time (p_c), s		0.9		12.3			1.5	4.1

Intersection Summary	
HCM 2010 Ctrl Delay	31.4
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.78	2.60	2.06	2.06
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1303	534	294	0
Effct. Green for Bike (s)	64.8	17.1	51.2	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1080	285	853	0
Bicycle Delay (s/bike)	12.7	44.1	19.7	0.0
Bicycle Compliance	Fair	Poor	Fair	
Bicycle LOS Score	3.21	2.25	3.15	0.00
Bicycle LOS	C	B	C	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	125.4	73.1	103.0	63.0	96.6
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	7	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.79	2.77	2.57	2.29	2.84
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	740	787	263	254	498
Effct. Green for Bike (s)	50.0	54.6	20.5	20.5	14.0
Cross Street Width (ft)	96.6	63.0	73.1	125.4	103.0
Through Lanes Number	1	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	833	910	342	342	233
Bicycle Delay (s/bike)	20.4	17.8	41.3	41.3	46.8
Bicycle Compliance	Fair	Fair	Poor	Poor	Poor
Bicycle LOS Score	4.26	3.17	3.11	3.69	3.96
Bicycle LOS	E	C	C	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	762	171	64	527	27	67	152	50	38	170	39
Future Volume (veh/h)	59	762	171	64	527	27	67	152	50	38	170	39
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	68	876	197	74	606	31	77	175	57	44	195	45
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	418	1578	355	202	1882	96	445	1019	322	449	1105	249
Arrive On Green	0.19	0.19	0.19	0.57	0.57	0.57	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	759	2776	624	504	3311	169	1094	2559	808	1102	2773	626
Grp Volume(v), veh/h	68	540	533	74	313	324	77	115	117	44	119	121
Grp Sat Flow(s),veh/h/ln	759	1710	1690	504	1710	1770	1094	1710	1657	1102	1710	1689
Q Serve(g_s), s	9.4	34.3	34.4	14.8	11.6	11.6	5.9	5.2	5.5	3.2	5.4	5.6
Cycle Q Clear(g_c), s	21.0	34.3	34.4	49.2	11.6	11.6	11.5	5.2	5.5	8.7	5.4	5.6
Prop In Lane	1.00		0.37	1.00		0.10	1.00		0.49	1.00		0.37
Lane Grp Cap(c), veh/h	418	972	960	202	972	1006	445	681	660	449	681	673
V/C Ratio(X)	0.16	0.56	0.56	0.37	0.32	0.32	0.17	0.17	0.18	0.10	0.17	0.18
Avail Cap(c_a), veh/h	486	1126	1113	248	1126	1165	445	681	660	449	681	673
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.58	0.58	0.58	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	35.0	35.0	36.2	13.7	13.7	27.1	23.3	23.4	26.2	23.3	23.4
Incr Delay (d2), s/veh	0.1	0.3	0.3	0.9	0.2	0.2	0.8	0.5	0.6	0.4	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	16.4	16.2	2.1	5.5	5.7	1.9	2.6	2.6	1.0	2.6	2.7
LnGrp Delay(d),s/veh	34.7	35.3	35.3	37.2	13.8	13.8	28.0	23.8	24.0	26.6	23.9	24.0
LnGrp LOS	C	D	D	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1141			711			309			284	
Approach Delay, s/veh		35.3			16.3			24.9			24.4	
Approach LOS		D			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		49.8		70.2		49.8		70.2
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		34.5		76.5		34.5		76.5
Max Q Clear Time (g_c+I1), s		13.5		36.4		10.7		51.2
Green Ext Time (p_c), s		3.2		18.4		3.3		14.5

Intersection Summary	
HCM 2010 Ctrl Delay	27.2
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.69	2.65	2.47	2.43
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1141	711	309	284
Effct. Green for Bike (s)	55.1	55.1	60.9	60.9
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	918	918	1015	1015
Bicycle Delay (s/bike)	17.6	17.6	14.6	14.6
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	3.42	3.06	2.91	2.90
Bicycle LOS	C	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	524	166	144	357	78	141	495	114	106	566	110
Future Volume (veh/h)	104	524	166	144	357	78	141	495	114	106	566	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	122	616	195	169	420	92	166	582	134	125	666	129
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	178	849	380	225	948	424	222	1742	394	181	1695	324
Arrive On Green	0.11	0.25	0.25	0.14	0.28	0.28	0.14	0.43	0.43	0.11	0.41	0.41
Sat Flow, veh/h	1619	3420	1530	1619	3420	1530	1619	4010	906	1619	4144	792
Grp Volume(v), veh/h	122	616	195	169	420	92	166	473	243	125	525	270
Grp Sat Flow(s),veh/h/ln	1619	1710	1530	1619	1710	1530	1619	1638	1640	1619	1638	1660
Q Serve(g_s), s	8.7	19.8	13.2	12.0	12.1	5.5	11.8	11.5	11.8	8.9	13.5	13.8
Cycle Q Clear(g_c), s	8.7	19.8	13.2	12.0	12.1	5.5	11.8	11.5	11.8	8.9	13.5	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.55	1.00		0.48
Lane Grp Cap(c), veh/h	178	849	380	225	948	424	222	1423	713	181	1340	679
V/C Ratio(X)	0.69	0.73	0.51	0.75	0.44	0.22	0.75	0.33	0.34	0.69	0.39	0.40
Avail Cap(c_a), veh/h	290	983	440	290	983	440	290	1423	713	290	1340	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	0.84	0.84	0.84	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	41.4	38.9	49.7	35.7	33.4	49.8	22.4	22.5	51.3	24.9	25.0
Incr Delay (d2), s/veh	3.2	1.6	0.7	6.6	0.3	0.2	7.4	0.6	1.3	4.6	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	9.5	5.7	5.8	5.8	2.4	5.8	5.3	5.6	4.2	6.3	6.6
LnGrp Delay(d),s/veh	54.6	43.0	39.6	56.3	36.0	33.6	57.2	23.1	23.8	55.9	25.8	26.8
LnGrp LOS	D	D	D	E	D	C	E	C	C	E	C	C
Approach Vol, veh/h		933			681			882			920	
Approach Delay, s/veh		43.8			40.7			29.7			30.2	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	54.1	18.7	31.8	18.5	51.1	15.2	35.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	32.0	19.0	32.0	19.0	32.0	19.0	32.0
Max Q Clear Time (g_c+I1), s	10.9	13.8	14.0	21.8	13.8	15.8	10.7	14.1
Green Ext Time (p_c), s	0.2	9.6	0.2	5.5	0.2	8.9	0.2	7.6

Intersection Summary	
HCM 2010 Ctrl Delay	35.9
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.74	2.73	2.88	2.85
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	933	681	882	920
Effct. Green for Bike (s)	30.7	32.9	45.7	43.7
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	512	548	762	728
Bicycle Delay (s/bike)	33.2	31.6	23.0	24.3
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.63	3.42	3.15	3.17
Bicycle LOS	D	C	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	208	432	332	95	60	148
Future Volume (veh/h)	208	432	332	95	60	148
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1600	1800
Adj Flow Rate, veh/h	245	508	391	112	71	174
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	392	1262	674	301	911	1828
Arrive On Green	0.16	0.37	0.20	0.20	0.60	0.60
Sat Flow, veh/h	1619	3510	3510	1530	1524	3060
Grp Volume(v), veh/h	245	508	391	112	71	174
Grp Sat Flow(s),veh/h/ln	1619	1710	1710	1530	1524	1530
Q Serve(g_s), s	13.5	13.2	12.4	7.6	2.4	2.9
Cycle Q Clear(g_c), s	13.5	13.2	12.4	7.6	2.4	2.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	392	1262	674	301	911	1828
V/C Ratio(X)	0.63	0.40	0.58	0.37	0.08	0.10
Avail Cap(c_a), veh/h	693	2366	1140	510	911	1828
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	0.90	0.90	1.00	1.00
Uniform Delay (d), s/veh	29.4	28.0	43.7	41.7	10.2	10.3
Incr Delay (d2), s/veh	1.1	0.1	0.7	0.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	6.2	5.9	3.3	1.0	4.1
LnGrp Delay(d),s/veh	30.5	28.2	44.4	42.4	10.4	10.4
LnGrp LOS	C	C	D	D	B	B
Approach Vol, veh/h		753	503		245	
Approach Delay, s/veh		28.9	44.0		10.4	
Approach LOS		C	D		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				46.3		73.7	20.7	25.6
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				80.5		30.5	38.5	37.5
Max Q Clear Time (g_c+I1), s				15.2		4.9	15.5	14.4
Green Ext Time (p_c), s				7.9		0.8	0.7	6.7

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.58	2.42	2.44
Pedestrian Crosswalk LOS	B	B	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	753	503	245
Effct. Green for Bike (s)	49.5	22.3	66.5
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	825	372	1108
Bicycle Delay (s/bike)	20.7	39.8	11.9
Bicycle Compliance	Fair	Poor	Fair
Bicycle LOS Score	3.10	2.91	2.68
Bicycle LOS	C	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	74	190	20	17	2	226	701	106	14	913	253
Future Volume (veh/h)	136	74	190	20	17	2	226	701	106	14	913	253
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	120	134	216	23	19	2	257	797	120	16	1038	288
Adj No. of Lanes	1	1	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	255	284	489	79	168	75	262	3011	450	58	1955	1116
Arrive On Green	0.16	0.16	0.16	0.05	0.05	0.05	0.16	0.70	0.70	0.04	0.57	0.57
Sat Flow, veh/h	1619	1800	1530	1619	3420	1530	1619	4316	646	1619	3420	1530
Grp Volume(v), veh/h	120	134	216	23	19	2	257	604	313	16	1038	288
Grp Sat Flow(s),veh/h/ln	1619	1800	1530	1619	1710	1530	1619	1638	1686	1619	1710	1530
Q Serve(g_s), s	9.0	9.0	14.9	1.8	0.7	0.2	21.0	9.1	9.2	1.3	24.8	8.4
Cycle Q Clear(g_c), s	9.0	9.0	14.9	1.8	0.7	0.2	21.0	9.1	9.2	1.3	24.8	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	255	284	489	79	168	75	262	2285	1176	58	1955	1116
V/C Ratio(X)	0.47	0.47	0.44	0.29	0.11	0.03	0.98	0.26	0.27	0.28	0.53	0.26
Avail Cap(c_a), veh/h	420	467	644	420	887	397	262	2285	1176	262	1955	1116
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	51.0	35.9	61.0	60.5	60.2	55.6	7.5	7.5	62.5	17.5	6.0
Incr Delay (d2), s/veh	1.3	1.2	0.6	2.0	0.3	0.1	50.4	0.3	0.6	2.6	1.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	4.6	6.4	0.9	0.3	0.1	13.1	4.2	4.4	0.6	12.0	5.7
LnGrp Delay(d),s/veh	52.3	52.2	36.5	63.0	60.8	60.4	106.0	7.7	8.0	65.0	18.6	6.6
LnGrp LOS	D	D	D	E	E	E	F	A	A	E	B	A
Approach Vol, veh/h		470			44			1174			1342	
Approach Delay, s/veh		45.0			61.9			29.3			16.5	
Approach LOS		D			E			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.7	94.8		23.0	23.5	78.0		8.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	19.0	32.0		32.0	19.0	32.0		32.0
Max Q Clear Time (g_c+I1), s	2.3	11.2		16.9	23.0	26.8		3.8
Green Ext Time (p_c), s	0.0	14.7		1.6	0.0	4.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	26.6
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	66.5	66.5	66.5	66.5
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.52	2.38	2.88	2.94
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	455	44	1174	1342
Effct. Green for Bike (s)	19.1	10.0	97.0	68.1
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	287	150	1459	1024
Bicycle Delay (s/bike)	48.8	56.9	4.9	15.8
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	3.43	2.90	3.12	3.60
Bicycle LOS	C	C	C	D

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	10	0	245	20	1	181
Future Vol, veh/h	10	0	245	20	1	181
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	0	258	21	1	191

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	365	139	0	0	279	0
Stage 1	268	-	-	-	-	-
Stage 2	97	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	613	890	-	-	1295	-
Stage 1	759	-	-	-	-	-
Stage 2	922	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	612	890	-	-	1295	-
Mov Cap-2 Maneuver	650	-	-	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	650	1295	-
HCM Lane V/C Ratio	-	-	0.016	0.001	-
HCM Control Delay (s)	-	-	10.6	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	74931
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	2017
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	1.00
Prob of Blocked Lane	0.93
Delay for adq Gap	74932.80
Avg Ped Delay (s)	74931.00

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	52.6
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	426
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.89
Prob of Blocked Lane	0.43
Delay for adq Gap	58.80
Avg Ped Delay (s)	52.59

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	5	0	265	10	0	191
Future Vol, veh/h	5	0	265	10	0	191
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	0	279	11	0	201

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	385	145	0	0	289	0
Stage 1	284	-	-	-	-	-
Stage 2	101	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	596	882	-	-	1284	-
Stage 1	745	-	-	-	-	-
Stage 2	918	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	596	882	-	-	1284	-
Mov Cap-2 Maneuver	637	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	918	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	637	1284	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s)	-	-	10.7	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	63.7
Level of Service	F

Crosswalk	
Length (ft)	57
Lanes Crossed	4
Veh Vol Crossed	456
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.29
Prob of Delayed X-ing	0.91
Prob of Blocked Lane	0.46
Delay for adq Gap	69.71
Avg Ped Delay (s)	63.66

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	60.7
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	456
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.91
Prob of Blocked Lane	0.45
Delay for adq Gap	66.73
Avg Ped Delay (s)	60.71

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	14	0	275	29	0	195
Future Vol, veh/h	14	0	275	29	0	195
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	15	0	289	31	0	205

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	408	160	0	0	320	0
Stage 1	305	-	-	-	-	-
Stage 2	103	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	577	863	-	-	1251	-
Stage 1	727	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	577	863	-	-	1251	-
Mov Cap-2 Maneuver	622	-	-	-	-	-
Stage 1	727	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	622	1251	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	-	-	10.9	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	113.1
Level of Service	F

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	470
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	0.95
Prob of Blocked Lane	0.52
Delay for adq Gap	119.49
Avg Ped Delay (s)	113.10

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	182.6
Level of Service	F

Crosswalk	
Length (ft)	79
Lanes Crossed	4
Veh Vol Crossed	470
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	25.57
Prob of Delayed X-ing	0.96
Prob of Blocked Lane	0.57
Delay for adq Gap	189.31
Avg Ped Delay (s)	182.59

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	300	265	0	0	0	0	332	248	173	456	0
Future Volume (vph)	151	300	265	0	0	0	0	332	248	173	456	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0						2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91						0.91		0.97	0.95	
Frt	1.00	0.93						0.94		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1470	3048						4599		2949	3420	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1470	3048						4599		2949	3420	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	176	349	308	0	0	0	0	386	288	201	530	0
RTOR Reduction (vph)	0	73	0	0	0	0	0	141	0	0	0	0
Lane Group Flow (vph)	158	602	0	0	0	0	0	533	0	201	530	0
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6											
Actuated Green, G (s)	72.4	72.4						20.6		13.5	38.6	
Effective Green, g (s)	74.9	74.9						23.1		16.0	41.1	
Actuated g/C Ratio	0.62	0.62						0.19		0.13	0.34	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	917	1902						885		393	1171	
v/s Ratio Prot								c0.12		c0.07	0.15	
v/s Ratio Perm	0.11	0.20										
v/c Ratio	0.17	0.32						0.60		0.51	0.45	
Uniform Delay, d1	9.5	10.6						44.3		48.4	30.7	
Progression Factor	1.00	1.00						1.00		1.31	0.98	
Incremental Delay, d2	0.4	0.4						1.2		1.1	0.3	
Delay (s)	9.9	11.0						45.4		64.5	30.3	
Level of Service	A	B						D		E	C	
Approach Delay (s)		10.8			0.0			45.4			39.7	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	358	264	476	179	322	0	0	290	22
Future Volume (vph)	0	0	0	358	264	476	179	322	0	0	290	22
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.95	0.85	1.00	1.00			0.99	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1615	1628	1454	1615	3420			6125	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1615	1628	1454	1615	3420			6125	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	0	0	0	448	330	595	224	402	0	0	362	28
RTOR Reduction (vph)	0	0	0	0	8	166	0	0	0	0	13	0
Lane Group Flow (vph)	0	0	0	448	477	274	224	403	0	0	378	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				72.2	72.2	72.2	21.3	38.8			13.0	
Effective Green, g (s)				74.7	74.7	74.7	23.8	41.3			15.5	
Actuated g/C Ratio				0.62	0.62	0.62	0.20	0.34			0.13	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				1005	1013	905	320	1177			791	
v/s Ratio Prot					c0.29		c0.14	0.12			c0.06	
v/s Ratio Perm				0.28		0.19						
v/c Ratio				0.45	0.47	0.30	0.70	0.34			0.48	
Uniform Delay, d1				11.8	12.1	10.5	44.8	29.3			48.5	
Progression Factor				1.00	1.00	1.00	1.58	0.79			0.57	
Incremental Delay, d2				1.4	1.6	0.9	6.4	0.2			0.4	
Delay (s)				13.3	13.7	11.4	77.2	23.4			28.0	
Level of Service				B	B	B	E	C			C	
Approach Delay (s)		0.0			12.8			42.6			28.0	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	441	771	0	0	328	168	192	2	80	0	0	0
Future Volume (vph)	441	771	0	0	328	168	192	2	80	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4914	1530	1534	1548	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4914	1530	1534	1548	1454			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	474	829	0	0	353	181	206	2	86	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	155	0	2	44	0	0	0
Lane Group Flow (vph)	474	829	0	0	353	26	109	106	33	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	43.2	62.3			14.6	14.6	48.7	48.7	48.7			
Effective Green, g (s)	45.7	64.8			17.1	17.1	51.2	51.2	51.2			
Actuated g/C Ratio	0.38	0.54			0.14	0.14	0.43	0.43	0.43			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	615	1846			700	218	654	660	620			
v/s Ratio Prot	c0.29	c0.24			0.07							
v/s Ratio Perm						0.02	c0.07	0.07	0.02			
v/c Ratio	0.77	0.45			0.50	0.12	0.17	0.16	0.05			
Uniform Delay, d1	32.6	16.8			47.5	44.9	21.2	21.2	20.2			
Progression Factor	1.00	1.00			0.79	2.93	1.00	1.00	1.00			
Incremental Delay, d2	5.9	0.2			0.6	0.2	0.5	0.5	0.2			
Delay (s)	38.5	16.9			38.3	131.7	21.8	21.7	20.3			
Level of Service	D	B			D	F	C	C	C			
Approach Delay (s)		24.8			69.9			21.4			0.0	
Approach LOS		C			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	35.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	59	549	58	59	228	409	13	11	49	112	66	37
Future Volume (vph)	59	549	58	59	228	409	13	11	49	112	66	37
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800	1800	1800	1600	1800	1800	1700
Total Lost time (s)	2.0	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	1.00	1.00		0.97	0.95			0.97	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	1615	1800	1530		2949	3405			2949	1800	1530	1615
Flt Permitted	0.95	1.00	1.00		0.95	1.00			0.95	1.00	1.00	0.95
Satd. Flow (perm)	1615	1800	1530		2949	3405			2949	1800	1530	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	66	610	64	66	253	454	14	12	54	124	73	41
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	50	0
Lane Group Flow (vph)	66	610	64	0	319	468	0	0	66	124	23	41
Turn Type	Prot	NA	Prot	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot
Protected Phases	7	4	4	3	3	8		5	5	2	3	1
Permitted Phases											2	
Actuated Green, G (s)	10.9	47.5	47.5		15.5	52.1			5.0	18.0	33.5	5.0
Effective Green, g (s)	13.4	50.0	50.0		18.0	54.6			7.5	20.5	38.5	7.5
Actuated g/C Ratio	0.11	0.42	0.42		0.15	0.46			0.06	0.17	0.32	0.06
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5			4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	180	750	637		442	1549			184	307	516	100
v/s Ratio Prot	0.04	c0.34	0.04		c0.11	0.14			0.02	c0.07	0.01	c0.03
v/s Ratio Perm											0.01	
v/c Ratio	0.37	0.81	0.10		0.72	0.30			0.36	0.40	0.05	0.41
Uniform Delay, d1	49.4	30.9	21.3		48.6	20.7			53.9	44.3	28.1	54.1
Progression Factor	0.76	1.25	1.07		0.74	1.57			1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	9.1	0.3		9.6	0.5			5.4	3.9	0.2	12.0
Delay (s)	43.2	47.8	23.1		45.7	32.8			59.3	48.2	28.3	66.1
Level of Service	D	D	C		D	C			E	D	C	E
Approach Delay (s)		45.3				38.1				45.5		
Approach LOS		D				D				D		

Intersection Summary			
HCM 2000 Control Delay	45.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations							
Traffic Volume (vph)	131	27	33	4	104	296	44
Future Volume (vph)	131	27	33	4	104	296	44
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1800	1800
Total Lost time (s)	2.0			2.0	2.0	2.0	
Lane Util. Factor	0.95			1.00	1.00	0.88	
Frt	0.95			1.00	1.00	0.85	
Flt Protected	1.00			0.95	0.95	1.00	
Satd. Flow (prot)	3259			1520	1520	2693	
Flt Permitted	1.00			0.95	0.95	1.00	
Satd. Flow (perm)	3259			1520	1520	2693	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	146	30	37	4	116	329	49
RTOR Reduction (vph)	15	0	0	0	0	156	0
Lane Group Flow (vph)	198	0	0	4	116	222	0
Turn Type	NA			Prot	Prot	Perm	
Protected Phases	6			9	9		
Permitted Phases						9	
Actuated Green, G (s)	18.0			11.5	11.5	11.5	
Effective Green, g (s)	20.5			14.0	14.0	14.0	
Actuated g/C Ratio	0.17			0.12	0.12	0.12	
Clearance Time (s)	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	556			177	177	314	
v/s Ratio Prot	0.06			0.00	0.08		
v/s Ratio Perm						c0.08	
v/c Ratio	0.36			0.02	0.66	0.71	
Uniform Delay, d1	43.9			46.9	50.7	51.0	
Progression Factor	1.00			0.91	0.92	0.87	
Incremental Delay, d2	1.8			0.2	16.7	12.1	
Delay (s)	45.7			42.8	63.2	56.5	
Level of Service	D			D	E	E	
Approach Delay (s)	49.0				57.9		
Approach LOS	D				E		

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: S Arrowhead Avenue & W Mill Street/E Mill Street

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	762	171	64	527	27	67	152	50	38	170	39
Future Volume (vph)	59	762	171	64	527	27	67	152	50	38	170	39
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3326		1615	3395		1615	3294		1615	3324	
Flt Permitted	0.31	1.00		0.13	1.00		0.58	1.00		0.58	1.00	
Satd. Flow (perm)	534	3326		226	3395		983	3294		993	3324	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	68	876	197	74	606	31	77	175	57	44	195	45
RTOR Reduction (vph)	0	25	0	0	5	0	0	19	0	0	12	0
Lane Group Flow (vph)	68	1048	0	74	632	0	77	213	0	44	228	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	52.6	52.6		52.6	52.6		58.4	58.4		58.4	58.4	
Effective Green, g (s)	55.1	55.1		55.1	55.1		60.9	60.9		60.9	60.9	
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.51	0.51		0.51	0.51	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	245	1527		103	1558		498	1671		503	1686	
v/s Ratio Prot		0.31			0.19			0.06			0.07	
v/s Ratio Perm	0.13			c0.33			c0.08			0.04		
v/c Ratio	0.28	0.69		0.72	0.41		0.15	0.13		0.09	0.14	
Uniform Delay, d1	20.1	25.6		26.2	21.6		15.8	15.6		15.2	15.6	
Progression Factor	0.40	0.47		0.99	0.88		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.9		19.3	0.2		0.7	0.2		0.3	0.2	
Delay (s)	8.5	12.9		45.4	19.0		16.5	15.7		15.6	15.8	
Level of Service	A	B		D	B		B	B		B	B	
Approach Delay (s)		12.7			21.8			15.9			15.8	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	524	166	144	357	78	141	495	114	106	566	110
Future Volume (vph)	104	524	166	144	357	78	141	495	114	106	566	110
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3420	1530	1615	3420	1530	1615	4776		1615	4794	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1615	3420	1530	1615	3420	1530	1615	4776		1615	4794	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	122	616	195	169	420	92	166	582	134	125	666	129
RTOR Reduction (vph)	0	0	145	0	0	67	0	27	0	0	22	0
Lane Group Flow (vph)	122	616	50	169	420	25	166	689	0	125	773	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	14.1	28.2	28.2	16.4	30.5	30.5	16.3	43.1		14.3	41.1	
Effective Green, g (s)	16.6	30.7	30.7	18.9	33.0	33.0	18.8	45.6		16.8	43.6	
Actuated g/C Ratio	0.14	0.26	0.26	0.16	0.28	0.28	0.16	0.38		0.14	0.36	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	223	874	391	254	940	420	253	1814		226	1741	
v/s Ratio Prot	0.08	c0.18		c0.10	0.12		c0.10	0.14		0.08	c0.16	
v/s Ratio Perm			0.03			0.02						
v/c Ratio	0.55	0.70	0.13	0.67	0.45	0.06	0.66	0.38		0.55	0.44	
Uniform Delay, d1	48.2	40.5	34.3	47.6	36.0	32.1	47.6	27.0		48.1	29.0	
Progression Factor	0.65	1.23	4.73	0.82	1.29	3.54	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.5	2.4	0.1	6.3	0.3	0.1	6.0	0.6		2.9	0.8	
Delay (s)	33.9	52.2	162.6	45.2	46.7	113.6	53.6	27.6		51.0	29.8	
Level of Service	C	D	F	D	D	F	D	C		D	C	
Approach Delay (s)		72.9			55.3			32.5			32.7	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	48.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	208	432	332	95	60	148
Future Volume (vph)	208	432	332	95	60	148
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.92	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.98	1.00
Satd. Flow (prot)	1615	3420	3420	1530	2785	1392
Flt Permitted	0.25	1.00	1.00	1.00	0.98	1.00
Satd. Flow (perm)	426	3420	3420	1530	2785	1392
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	245	508	391	112	71	174
RTOR Reduction (vph)	0	0	0	91	39	39
Lane Group Flow (vph)	245	508	391	21	119	48
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	47.0	47.0	19.8	19.8	64.0	64.0
Effective Green, g (s)	49.5	49.5	22.3	22.3	66.5	66.5
Actuated g/C Ratio	0.41	0.41	0.19	0.19	0.55	0.55
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	425	1410	635	284	1543	771
v/s Ratio Prot	c0.12	0.15	c0.11		c0.04	
v/s Ratio Perm	0.12			0.01		0.03
v/c Ratio	0.58	0.36	0.62	0.07	0.08	0.06
Uniform Delay, d1	25.3	24.3	44.9	40.3	12.5	12.4
Progression Factor	1.23	1.21	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.1	1.8	0.1	0.1	0.2
Delay (s)	32.7	29.7	46.7	40.4	12.6	12.5
Level of Service	C	C	D	D	B	B
Approach Delay (s)		30.7	45.3		12.5	
Approach LOS		C	D		B	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	74	190	20	17	2	226	701	106	14	913	253
Future Volume (vph)	136	74	190	20	17	2	226	701	106	14	913	253
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1534	1684	1530	1615	3420	1530	1615	4818		1615	3420	1530
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1534	1684	1530	1615	3420	1530	1615	4818		1615	3420	1530
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	155	84	216	23	19	2	257	797	120	16	1038	288
RTOR Reduction (vph)	0	0	133	0	0	2	0	6	0	0	0	103
Lane Group Flow (vph)	118	121	83	23	19	0	257	911	0	16	1038	185
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	16.6	16.6	46.1	5.1	5.1	5.1	29.5	90.0		3.3	63.8	80.4
Effective Green, g (s)	19.1	19.1	51.1	7.6	7.6	7.6	32.0	92.5		5.8	66.3	85.4
Actuated g/C Ratio	0.14	0.14	0.38	0.06	0.06	0.06	0.24	0.70		0.04	0.50	0.64
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	220	241	587	92	195	87	388	3350		70	1704	1005
v/s Ratio Prot	c0.08	0.07	0.03	c0.01	0.01		c0.16	0.19		0.01	c0.30	0.03
v/s Ratio Perm			0.02			0.00						0.09
v/c Ratio	0.54	0.50	0.14	0.25	0.10	0.00	0.66	0.27		0.23	0.61	0.18
Uniform Delay, d1	52.8	52.6	26.7	60.0	59.4	59.1	45.6	7.6		61.4	24.0	9.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.5	1.6	0.1	1.4	0.2	0.0	4.2	0.2		1.7	1.6	0.1
Delay (s)	55.3	54.2	26.8	61.4	59.7	59.1	49.8	7.8		63.1	25.6	9.7
Level of Service	E	D	C	E	E	E	D	A		E	C	A
Approach Delay (s)		41.5			60.5			17.0			22.7	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	133.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	328	288	0	0	0	1	432	236	414	534	0
Future Volume (veh/h)	214	328	288	0	0	0	1	432	236	414	534	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800				1800	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	230	353	310				1	465	254	445	574	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	796	885	752				31	883	374	561	1624	0
Arrive On Green	0.49	0.49	0.49				0.27	0.27	0.27	0.19	0.47	0.00
Sat Flow, veh/h	1619	1800	1530				1	3287	1392	2956	3510	0
Grp Volume(v), veh/h	230	353	310				255	211	254	445	574	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1530				1798	1491	1392	1478	1710	0
Q Serve(g_s), s	10.1	14.9	15.5				0.0	14.5	19.6	17.2	12.7	0.0
Cycle Q Clear(g_c), s	10.1	14.9	15.5				14.5	14.5	19.6	17.2	12.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	796	885	752				513	400	374	561	1624	0
V/C Ratio(X)	0.29	0.40	0.41				0.50	0.53	0.68	0.79	0.35	0.00
Avail Cap(c_a), veh/h	796	885	752				667	528	493	727	2109	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	1.00	0.82	0.82	0.00
Uniform Delay (d), s/veh	18.1	19.3	19.4				37.4	37.4	39.3	46.4	19.9	0.0
Incr Delay (d2), s/veh	0.9	1.3	1.7				0.7	1.1	2.4	3.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	7.7	6.9				7.3	6.1	7.8	7.3	6.0	0.0
LnGrp Delay(d),s/veh	19.0	20.6	21.1				38.1	38.5	41.7	50.2	20.0	0.0
LnGrp LOS	B	C	C				D	D	D	D	B	
Approach Vol, veh/h		893						720			1019	
Approach Delay, s/veh		20.4						39.5			33.2	
Approach LOS		C						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			24.8	34.2		61.0		59.0
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			19.2	21.6		17.5		14.7
Green Ext Time (p_c), s			1.0	8.1		5.0		11.4

Intersection Summary	
HCM 2010 Ctrl Delay	30.6
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.37	2.25	2.63	2.75
Pedestrian Crosswalk LOS	B	B	B	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	893	0	720	1019
Effct. Green for Bike (s)	62.0	0.0	26.7	54.0
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1033	0	445	900
Bicycle Delay (s/bike)	14.0	0.0	36.3	18.1
Bicycle Compliance	Fair		Poor	Fair
Bicycle LOS Score	3.69	0.00	2.40	3.27
Bicycle LOS	D		B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	271	290	347	214	432	0	0	671	191
Future Volume (veh/h)	0	0	0	271	290	347	214	432	0	0	671	191
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1700	1800	1800	1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h				277	340	325	218	441	0	0	685	195
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				864	961	817	275	1480	0	0	1199	329
Arrive On Green				0.53	0.53	0.53	0.17	0.43	0.00	0.00	0.25	0.25
Sat Flow, veh/h				1619	1800	1530	1619	3510	0	0	5125	1335
Grp Volume(v), veh/h				277	340	325	218	441	0	0	652	228
Grp Sat Flow(s),veh/h/ln				1619	1800	1530	1619	1710	0	0	1548	1564
Q Serve(g_s), s				11.5	13.0	15.1	15.5	10.1	0.0	0.0	14.8	15.5
Cycle Q Clear(g_c), s				11.5	13.0	15.1	15.5	10.1	0.0	0.0	14.8	15.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.85
Lane Grp Cap(c), veh/h				864	961	817	275	1480	0	0	1143	385
V/C Ratio(X)				0.32	0.35	0.40	0.79	0.30	0.00	0.00	0.57	0.59
Avail Cap(c_a), veh/h				864	961	817	398	2109	0	0	1645	554
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.79	0.79	0.00	0.00	0.45	0.45
Uniform Delay (d), s/veh				15.7	16.1	16.5	47.8	22.2	0.0	0.0	39.7	39.9
Incr Delay (d2), s/veh				1.0	1.0	1.4	5.4	0.1	0.0	0.0	0.2	0.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.4	6.7	6.6	7.4	4.8	0.0	0.0	6.4	6.7
LnGrp Delay(d),s/veh				16.7	17.1	18.0	53.2	22.3	0.0	0.0	39.9	40.6
LnGrp LOS				B	B	B	D	C			D	D
Approach Vol, veh/h					942			659			880	
Approach Delay, s/veh					17.3			32.5			40.0	
Approach LOS					B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		66.1		53.9			22.4	31.5
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		39.5		71.5			27.0	40.0
Max Q Clear Time (g_c+I1), s		17.1		12.1			17.5	17.5
Green Ext Time (p_c), s		4.1		12.5			0.4	9.6

Intersection Summary	
HCM 2010 Ctrl Delay	29.4
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	106.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.19	2.26	2.55	2.65
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	927	659	880
Effct. Green for Bike (s)	0.0	63.2	52.8	27.3
Cross Street Width (ft)	75.9	106.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	1053	880	455
Bicycle Delay (s/bike)	0.0	13.4	18.8	35.8
Bicycle Compliance		Fair	Fair	Poor
Bicycle LOS Score	0.00	4.72	2.70	2.57
Bicycle LOS		E	B	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	528	718	0	0	571	473	239	5	75	0	0	0
Future Volume (veh/h)	528	718	0	0	571	473	239	5	75	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	562	764	0	0	607	503	281	0	55			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	616	2270	0	0	1310	408	981	0	463			
Arrive On Green	0.38	0.66	0.00	0.00	0.27	0.27	0.30	0.00	0.30			
Sat Flow, veh/h	1619	3510	0	0	5076	1530	3238	0	1530			
Grp Volume(v), veh/h	562	764	0	0	607	503	281	0	55			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1638	1530	1619	0	1530			
Q Serve(g_s), s	39.5	11.6	0.0	0.0	12.4	32.0	7.9	0.0	3.1			
Cycle Q Clear(g_c), s	39.5	11.6	0.0	0.0	12.4	32.0	7.9	0.0	3.1			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	616	2270	0	0	1310	408	981	0	463			
V/C Ratio(X)	0.91	0.34	0.00	0.00	0.46	1.23	0.29	0.00	0.12			
Avail Cap(c_a), veh/h	783	2622	0	0	1310	408	981	0	463			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.81	0.81	1.00	0.00	1.00			
Uniform Delay (d), s/veh	35.3	8.7	0.0	0.0	36.8	44.0	31.9	0.0	30.2			
Incr Delay (d2), s/veh	12.8	0.1	0.0	0.0	0.2	121.1	0.7	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	19.8	5.4	0.0	0.0	5.6	27.2	3.7	0.0	1.4			
LnGrp Delay(d),s/veh	48.1	8.8	0.0	0.0	37.0	165.1	32.7	0.0	30.8			
LnGrp LOS	D	A			D	F	C		C			
Approach Vol, veh/h		1326			1110			336				
Approach Delay, s/veh		25.5			95.1			32.4				
Approach LOS		C			F			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		38.3		81.7			47.7	34.0
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		21.5		89.5			55.5	29.5
Max Q Clear Time (g_c+I1), s		9.9		13.6			41.5	34.0
Green Ext Time (p_c), s		0.9		18.9			1.6	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.2
HCM 2010 LOS	D

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.83	2.70	2.07	2.26
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1326	1110	339	0
Effct. Green for Bike (s)	79.3	27.2	36.7	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1322	453	612	0
Bicycle Delay (s/bike)	6.9	35.9	28.9	0.0
Bicycle Compliance	Good	Poor	Fair	
Bicycle LOS Score	3.23	2.56	3.23	0.00
Bicycle LOS	C	B	C	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	125.4	73.1	103.0	63.0	96.6
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	7	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.83	2.81	2.67	2.36	2.87
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	628	1105	671	368	556
Effct. Green for Bike (s)	38.5	47.0	28.0	20.5	14.0
Cross Street Width (ft)	96.6	63.0	73.1	125.4	103.0
Through Lanes Number	1	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	642	783	467	342	233
Bicycle Delay (s/bike)	27.7	22.2	35.3	41.3	46.8
Bicycle Compliance	Fair	Fair	Poor	Poor	Poor
Bicycle LOS Score	4.07	3.44	3.79	3.78	4.05
Bicycle LOS	D	C	D	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	707	111	74	825	39	143	267	71	36	266	66
Future Volume (veh/h)	63	707	111	74	825	39	143	267	71	36	266	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	68	768	121	80	897	42	155	290	77	39	289	72
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	232	1448	228	211	1627	76	466	1283	335	462	1301	319
Arrive On Green	0.16	0.16	0.16	0.49	0.49	0.49	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	572	2961	466	600	3327	156	979	2685	701	974	2724	668
Grp Volume(v), veh/h	68	443	446	80	461	478	155	183	184	39	180	181
Grp Sat Flow(s),veh/h/ln	572	1710	1718	600	1710	1773	979	1710	1676	974	1710	1682
Q Serve(g_s), s	13.4	28.5	28.5	13.8	22.6	22.6	13.2	7.5	7.7	2.9	7.4	7.6
Cycle Q Clear(g_c), s	36.0	28.5	28.5	42.4	22.6	22.6	20.8	7.5	7.7	10.7	7.4	7.6
Prop In Lane	1.00		0.27	1.00		0.09	1.00		0.42	1.00		0.40
Lane Grp Cap(c), veh/h	232	836	840	211	836	867	466	817	801	462	817	803
V/C Ratio(X)	0.29	0.53	0.53	0.38	0.55	0.55	0.33	0.22	0.23	0.08	0.22	0.23
Avail Cap(c_a), veh/h	257	912	916	237	912	945	466	817	801	462	817	803
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	0.65	0.65	0.65	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	37.7	37.7	38.8	21.4	21.4	24.4	18.3	18.4	21.5	18.3	18.4
Incr Delay (d2), s/veh	0.4	0.3	0.3	0.7	0.4	0.4	1.9	0.6	0.7	0.4	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	13.6	13.7	2.3	10.7	11.1	3.8	3.7	3.7	0.8	3.6	3.7
LnGrp Delay(d),s/veh	51.8	38.0	38.0	39.6	21.8	21.8	26.4	19.0	19.1	21.9	18.9	19.0
LnGrp LOS	D	D	D	D	C	C	C	B	B	C	B	B
Approach Vol, veh/h		957			1019			522			400	
Approach Delay, s/veh		39.0			23.2			21.2			19.2	
Approach LOS		D			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		59.3		60.7		59.3		60.7
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		49.5		61.5		49.5		61.5
Max Q Clear Time (g_c+I1), s		22.8		38.0		12.7		44.4
Green Ext Time (p_c), s		5.8		14.7		6.1		11.8

Intersection Summary	
HCM 2010 Ctrl Delay	27.5
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.73	2.69	2.52	2.48
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	957	1019	522	400
Effct. Green for Bike (s)	47.0	47.0	69.0	69.0
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	783	783	1150	1150
Bicycle Delay (s/bike)	22.2	22.2	10.8	10.8
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	3.27	3.32	3.09	2.99
Bicycle LOS	C	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	459	185	169	564	104	165	666	104	117	702	104
Future Volume (veh/h)	156	459	185	169	564	104	165	666	104	117	702	104
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	166	488	197	180	600	111	176	709	111	124	747	111
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	222	829	371	240	867	388	232	1853	287	180	1729	255
Arrive On Green	0.14	0.24	0.24	0.05	0.08	0.08	0.14	0.43	0.43	0.11	0.40	0.40
Sat Flow, veh/h	1619	3420	1530	1619	3420	1530	1619	4293	666	1619	4326	638
Grp Volume(v), veh/h	166	488	197	180	600	111	176	539	281	124	564	294
Grp Sat Flow(s),veh/h/ln	1619	1710	1530	1619	1710	1530	1619	1638	1683	1619	1638	1687
Q Serve(g_s), s	11.8	15.1	13.4	13.2	20.5	8.2	12.5	13.4	13.7	8.8	15.0	15.2
Cycle Q Clear(g_c), s	11.8	15.1	13.4	13.2	20.5	8.2	12.5	13.4	13.7	8.8	15.0	15.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.40	1.00		0.38
Lane Grp Cap(c), veh/h	222	829	371	240	867	388	232	1414	726	180	1309	674
V/C Ratio(X)	0.75	0.59	0.53	0.75	0.69	0.29	0.76	0.38	0.39	0.69	0.43	0.44
Avail Cap(c_a), veh/h	290	983	440	290	983	440	290	1414	726	290	1309	674
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.72	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	40.2	39.5	54.9	50.4	44.8	49.4	23.2	23.3	51.3	26.1	26.2
Incr Delay (d2), s/veh	5.4	0.5	0.8	6.9	1.5	0.3	8.7	0.8	1.6	4.6	1.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	7.2	5.8	6.4	9.9	3.5	6.2	6.2	6.6	4.2	6.9	7.5
LnGrp Delay(d),s/veh	55.2	40.7	40.4	61.8	51.9	45.1	58.1	24.0	24.8	56.0	27.2	28.2
LnGrp LOS	E	D	D	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		851			891			996			982	
Approach Delay, s/veh		43.4			53.0			30.3			31.1	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	53.8	19.8	31.1	19.2	50.0	18.5	32.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	32.0	19.0	32.0	19.0	32.0	19.0	32.0
Max Q Clear Time (g_c+I1), s	10.8	15.7	15.2	17.1	14.5	17.2	13.8	22.5
Green Ext Time (p_c), s	0.2	9.9	0.2	7.3	0.2	9.2	0.2	5.4

Intersection Summary	
HCM 2010 Ctrl Delay	39.0
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.76	2.74	2.91	2.89
Pedestrian Crosswalk LOS	C	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	851	891	996	982
Effct. Green for Bike (s)	29.1	29.6	46.9	44.2
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	485	493	782	737
Bicycle Delay (s/bike)	34.4	34.1	22.3	23.9
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.56	3.59	3.21	3.20
Bicycle LOS	D	D	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	135	495	427	40	110	207
Future Volume (veh/h)	135	495	427	40	110	207
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1600	1800
Adj Flow Rate, veh/h	153	562	485	45	120	240
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	322	1220	797	357	929	1866
Arrive On Green	0.11	0.36	0.23	0.23	0.61	0.61
Sat Flow, veh/h	1619	3510	3510	1530	1524	3060
Grp Volume(v), veh/h	153	562	485	45	120	240
Grp Sat Flow(s),veh/h/ln	1619	1710	1710	1530	1524	1530
Q Serve(g_s), s	8.1	15.2	15.2	2.8	4.0	4.0
Cycle Q Clear(g_c), s	8.1	15.2	15.2	2.8	4.0	4.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	322	1220	797	357	929	1866
V/C Ratio(X)	0.47	0.46	0.61	0.13	0.13	0.13
Avail Cap(c_a), veh/h	540	2280	1397	625	929	1866
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.95	0.95	1.00	1.00
Uniform Delay (d), s/veh	28.9	29.7	41.1	36.4	9.9	9.9
Incr Delay (d2), s/veh	0.9	0.2	0.7	0.1	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	7.2	7.3	1.2	1.7	5.6
LnGrp Delay(d),s/veh	29.8	29.9	41.8	36.5	10.2	10.0
LnGrp LOS	C	C	D	D	B	B
Approach Vol, veh/h		715	530		360	
Approach Delay, s/veh		29.9	41.4		10.1	
Approach LOS		C	D		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				44.8		75.2	14.8	30.0
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				77.5		33.5	26.5	46.5
Max Q Clear Time (g_c+I1), s				17.2		6.0	10.1	17.2
Green Ext Time (p_c), s				9.2		1.3	0.3	8.3

Intersection Summary	
HCM 2010 Ctrl Delay	29.2
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.60	2.45	2.43
Pedestrian Crosswalk LOS	B	B	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	715	530	360
Effct. Green for Bike (s)	45.6	25.9	70.4
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	760	432	1173
Bicycle Delay (s/bike)	23.1	36.9	10.3
Bicycle Compliance	Fair	Poor	Fair
Bicycle LOS Score	3.07	2.93	2.77
Bicycle LOS	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	289	8	259	25	24	2	126	1080	16	7	927	197
Future Volume (veh/h)	289	8	259	25	24	2	126	1080	16	7	927	197
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	334	0	294	28	27	2	143	1227	18	8	1053	224
Adj No. of Lanes	2	0	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	667	0	498	84	177	79	194	3261	48	46	1923	1175
Arrive On Green	0.21	0.00	0.21	0.05	0.05	0.05	0.12	0.65	0.65	0.03	0.56	0.56
Sat Flow, veh/h	3238	0	1530	1619	3420	1530	1619	4990	73	1619	3420	1530
Grp Volume(v), veh/h	334	0	294	28	27	2	143	806	439	8	1053	224
Grp Sat Flow(s),veh/h/ln	1619	0	1530	1619	1710	1530	1619	1638	1787	1619	1710	1530
Q Serve(g_s), s	12.1	0.0	21.3	2.2	1.0	0.2	11.3	15.0	15.0	0.6	25.9	5.3
Cycle Q Clear(g_c), s	12.1	0.0	21.3	2.2	1.0	0.2	11.3	15.0	15.0	0.6	25.9	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	667	0	498	84	177	79	194	2141	1168	46	1923	1175
V/C Ratio(X)	0.50	0.00	0.59	0.33	0.15	0.03	0.74	0.38	0.38	0.17	0.55	0.19
Avail Cap(c_a), veh/h	840	0	580	420	887	397	262	2141	1168	262	1923	1175
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.7	0.0	37.4	60.8	60.3	59.9	56.5	10.6	10.6	63.1	18.4	4.2
Incr Delay (d2), s/veh	0.6	0.0	1.1	2.3	0.4	0.1	7.1	0.5	0.9	1.8	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	9.2	1.0	0.5	0.1	5.5	6.9	7.6	0.3	12.4	4.3
LnGrp Delay(d),s/veh	47.3	0.0	38.5	63.1	60.7	60.0	63.6	11.1	11.5	64.9	19.5	4.5
LnGrp LOS	D		D	E	E	E	E	B	B	E	B	A
Approach Vol, veh/h		628			57			1388			1285	
Approach Delay, s/veh		43.2			61.9			16.6			17.2	
Approach LOS		D			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	88.9		29.4	17.9	76.8		8.9
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	19.0	32.0		32.0	19.0	32.0		32.0
Max Q Clear Time (g_c+I1), s	2.6	17.0		23.3	13.3	27.9		4.2
Green Ext Time (p_c), s	0.0	12.4		1.6	0.2	3.8		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	22.6
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	66.5	66.5	66.5	66.5
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.53	2.34	2.93	3.02
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	631	57	1388	1285
Effct. Green for Bike (s)	23.3	10.3	93.0	73.9
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	350	155	1398	1111
Bicycle Delay (s/bike)	45.2	56.6	6.0	13.1
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	3.72	2.91	3.24	3.55
Bicycle LOS	D	C	C	D

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	22	1	148	10	0	253
Future Vol, veh/h	22	1	148	10	0	253
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	23	1	156	11	0	266

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	294	83	0	0	166	0
Stage 1	161	-	-	-	-	-
Stage 2	133	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	679	966	-	-	1424	-
Stage 1	857	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	679	966	-	-	1424	-
Mov Cap-2 Maneuver	707	-	-	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	885	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	715	1424	-
HCM Lane V/C Ratio	-	-	0.034	-	-
HCM Control Delay (s)	-	-	10.2	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	46.5
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	401
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.88
Prob of Blocked Lane	0.41
Delay for adq Gap	52.92
Avg Ped Delay (s)	46.55

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	46.5
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	401
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.88
Prob of Blocked Lane	0.41
Delay for adq Gap	52.92
Avg Ped Delay (s)	46.55

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	11	0	158	5	0	275
Future Vol, veh/h	11	0	158	5	0	275
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	12	0	166	5	0	289

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	314	86	0	0	172	0
Stage 1	169	-	-	-	-	-
Stage 2	145	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	660	962	-	-	1417	-
Stage 1	850	-	-	-	-	-
Stage 2	873	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	660	962	-	-	1417	-
Mov Cap-2 Maneuver	694	-	-	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	873	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	694	1417	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	-	-	10.3	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	57
Level of Service	F

Crosswalk	
Length (ft)	57
Lanes Crossed	4
Veh Vol Crossed	433
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.29
Prob of Delayed X-ing	0.90
Prob of Blocked Lane	0.44
Delay for adq Gap	63.18
Avg Ped Delay (s)	56.97

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	54.4
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	433
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.90
Prob of Blocked Lane	0.44
Delay for adq Gap	60.56
Avg Ped Delay (s)	54.40

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	32	0	163	14	0	286
Future Vol, veh/h	32	0	163	14	0	286
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	34	0	172	15	0	301

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	330	93	0	0	186	0
Stage 1	179	-	-	-	-	-
Stage 2	151	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	645	952	-	-	1401	-
Stage 1	840	-	-	-	-	-
Stage 2	867	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	645	952	-	-	1401	-
Mov Cap-2 Maneuver	684	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	867	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	684	1401	-
HCM Lane V/C Ratio	-	-	0.049	-	-
HCM Control Delay (s)	-	-	10.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	101.1
Level of Service	F

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	449
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	0.94
Prob of Blocked Lane	0.50
Delay for adq Gap	107.62
Avg Ped Delay (s)	101.05

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	161
Level of Service	F

Crosswalk	
Length (ft)	79
Lanes Crossed	4
Veh Vol Crossed	449
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	25.57
Prob of Delayed X-ing	0.96
Prob of Blocked Lane	0.55
Delay for adq Gap	167.94
Avg Ped Delay (s)	161.02

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	214	328	288	0	0	0	1	432	236	414	534	0
Future Volume (vph)	214	328	288	0	0	0	1	432	236	414	534	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0						2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91						0.91		0.97	0.95	
Frt	1.00	0.93						0.95		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1470	3049						4654		2949	3420	
Flt Permitted	0.95	1.00						0.94		0.95	1.00	
Satd. Flow (perm)	1470	3049						4372		2949	3420	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	230	353	310	0	0	0	1	465	254	445	574	0
RTOR Reduction (vph)	0	92	0	0	0	0	0	99	0	0	0	0
Lane Group Flow (vph)	207	594	0	0	0	0	0	621	0	445	574	0
Turn Type	Perm	NA					Perm	NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6						4					
Actuated Green, G (s)	59.5	59.5						24.2		22.8	51.5	
Effective Green, g (s)	62.0	62.0						26.7		25.3	54.0	
Actuated g/C Ratio	0.52	0.52						0.22		0.21	0.45	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	759	1575						972		621	1539	
v/s Ratio Prot										c0.15	0.17	
v/s Ratio Perm	0.14	0.19						c0.14				
v/c Ratio	0.27	0.38						0.64		0.72	0.37	
Uniform Delay, d1	16.3	17.4						42.3		44.0	21.8	
Progression Factor	1.00	1.00						1.00		1.63	0.67	
Incremental Delay, d2	0.9	0.7						1.4		3.7	0.1	
Delay (s)	17.2	18.1						43.7		75.4	14.7	
Level of Service	B	B						D		E	B	
Approach Delay (s)		17.9			0.0			43.7			41.2	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	271	290	347	214	432	0	0	671	191
Future Volume (vph)	0	0	0	271	290	347	214	432	0	0	671	191
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.98	0.85	1.00	1.00			0.97	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1615	1673	1454	1615	3420			5986	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1615	1673	1454	1615	3420			5986	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	277	296	354	218	441	0	0	685	195
RTOR Reduction (vph)	0	0	0	0	4	144	0	0	0	0	51	0
Lane Group Flow (vph)	0	0	0	277	342	160	218	441	0	0	829	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				60.7	60.7	60.7	21.0	50.3			24.8	
Effective Green, g (s)				63.2	63.2	63.2	23.5	52.8			27.3	
Actuated g/C Ratio				0.53	0.53	0.53	0.20	0.44			0.23	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				850	881	765	316	1504			1361	
v/s Ratio Prot					c0.20		c0.13	0.13			c0.14	
v/s Ratio Perm				0.17		0.11						
v/c Ratio				0.33	0.39	0.21	0.69	0.29			0.61	
Uniform Delay, d1				16.2	16.9	15.1	44.9	21.6			41.6	
Progression Factor				1.00	1.00	1.00	1.50	0.87			0.87	
Incremental Delay, d2				1.0	1.3	0.6	5.8	0.1			0.7	
Delay (s)				17.2	18.2	15.7	73.1	18.9			36.7	
Level of Service				B	B	B	E	B			D	
Approach Delay (s)		0.0			17.1			36.8			36.7	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	528	718	0	0	571	473	239	5	75	0	0	0
Future Volume (vph)	528	718	0	0	571	473	239	5	75	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4914	1530	1534	1553	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4914	1530	1534	1553	1454			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	562	764	0	0	607	503	254	5	80	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	361	0	1	50	0	0	0
Lane Group Flow (vph)	562	764	0	0	607	142	135	131	22	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	47.5	76.8			24.8	24.8	34.2	34.2	34.2			
Effective Green, g (s)	50.0	79.3			27.3	27.3	36.7	36.7	36.7			
Actuated g/C Ratio	0.42	0.66			0.23	0.23	0.31	0.31	0.31			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	672	2260			1117	348	469	474	444			
v/s Ratio Prot	c0.35	0.22			c0.12							
v/s Ratio Perm						0.09	c0.09	0.08	0.02			
v/c Ratio	0.84	0.34			0.54	0.41	0.29	0.28	0.05			
Uniform Delay, d1	31.3	8.9			40.9	39.5	31.7	31.6	29.4			
Progression Factor	1.00	1.00			1.00	2.82	1.00	1.00	1.00			
Incremental Delay, d2	8.9	0.1			0.5	0.7	1.5	1.4	0.2			
Delay (s)	40.2	9.0			41.4	111.8	33.2	33.0	29.6			
Level of Service	D	A			D	F	C	C	C			
Approach Delay (s)		22.2			73.3			32.4			0.0	
Approach LOS		C			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	63	452	67	2	104	313	595	15	44	210	255	115
Future Volume (vph)	63	452	67	2	104	313	595	15	44	210	255	115
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1600	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0	2.0			2.0	2.0			2.0	2.0	2.0
Lane Util. Factor	1.00	1.00	1.00			0.97	0.95			0.97	1.00	1.00
Frt	1.00	1.00	0.85			1.00	1.00			1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00			0.95	1.00			0.95	1.00	1.00
Satd. Flow (prot)	1615	1800	1530			2949	3407			2949	1800	1530
Flt Permitted	0.95	1.00	1.00			0.95	1.00			0.95	1.00	1.00
Satd. Flow (perm)	1615	1800	1530			2949	3407			2949	1800	1530
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	68	486	72	2	112	337	640	16	47	226	274	124
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	72
Lane Group Flow (vph)	68	486	74	0	0	449	656	0	0	273	274	52
Turn Type	Prot	NA	Prot		Prot	Prot	NA		Prot	Prot	NA	pm+ov
Protected Phases	7	4	4		3	3	8		5	5	2	3
Permitted Phases												2
Actuated Green, G (s)	11.0	36.0	36.0			19.5	44.5			12.5	25.5	45.0
Effective Green, g (s)	13.5	38.5	38.5			22.0	47.0			15.0	28.0	50.0
Actuated g/C Ratio	0.11	0.32	0.32			0.18	0.39			0.12	0.23	0.42
Clearance Time (s)	4.5	4.5	4.5			4.5	4.5			4.5	4.5	4.5
Lane Grp Cap (vph)	181	577	490			540	1334			368	420	663
v/s Ratio Prot	0.04	c0.27	0.05			c0.15	0.19			c0.09	c0.15	0.01
v/s Ratio Perm												0.02
v/c Ratio	0.38	0.84	0.15			0.83	0.49			0.74	0.65	0.08
Uniform Delay, d1	49.3	37.9	29.1			47.2	27.5			50.6	41.6	21.1
Progression Factor	0.89	0.94	0.88			0.50	0.77			1.00	1.00	1.00
Incremental Delay, d2	5.7	13.6	0.6			12.7	1.2			12.7	7.7	0.2
Delay (s)	49.4	49.1	26.3			36.1	22.3			63.3	49.3	21.3
Level of Service	D	D	C			D	C			E	D	C
Approach Delay (s)		46.4					27.9				49.8	
Approach LOS		D					C				D	

Intersection Summary			
HCM 2000 Control Delay	42.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	27	207	51	57	12	116	299	89
Future Volume (vph)	27	207	51	57	12	116	299	89
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1600	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	
Lane Util. Factor	1.00	0.95			1.00	1.00	0.88	
Frt	1.00	0.95			1.00	1.00	0.85	
Flt Protected	0.95	1.00			0.95	0.95	1.00	
Satd. Flow (prot)	1615	3244			1520	1520	2693	
Flt Permitted	0.95	1.00			0.95	0.95	1.00	
Satd. Flow (perm)	1615	3244			1520	1520	2693	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	29	223	55	61	13	125	322	96
RTOR Reduction (vph)	0	16	0	0	0	0	193	0
Lane Group Flow (vph)	29	323	0	0	13	125	225	0
Turn Type	Prot	NA			Prot	Prot	Perm	
Protected Phases	1	6			9	9		
Permitted Phases							9	
Actuated Green, G (s)	5.0	18.0			11.5	11.5	11.5	
Effective Green, g (s)	7.5	20.5			14.0	14.0	14.0	
Actuated g/C Ratio	0.06	0.17			0.12	0.12	0.12	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	100	554			177	177	314	
v/s Ratio Prot	0.02	0.10			0.01	0.08		
v/s Ratio Perm							c0.08	
v/c Ratio	0.29	0.58			0.07	0.71	0.72	
Uniform Delay, d1	53.7	45.8			47.2	51.0	51.1	
Progression Factor	1.00	1.00			0.82	0.80	0.69	
Incremental Delay, d2	7.2	4.4			0.8	20.7	12.9	
Delay (s)	60.9	50.3			39.7	61.4	48.2	
Level of Service	E	D			D	E	D	
Approach Delay (s)		51.1				50.9		
Approach LOS		D				D		

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: S Arrowhead Avenue & W Mill Street/E Mill Street

10/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	707	111	74	825	39	143	267	71	36	266	66
Future Volume (vph)	63	707	111	74	825	39	143	267	71	36	266	66
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3350		1615	3397		1615	3312		1615	3318	
Flt Permitted	0.14	1.00		0.16	1.00		0.51	1.00		0.50	1.00	
Satd. Flow (perm)	235	3350		270	3397		859	3312		852	3318	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	768	121	80	897	42	155	290	77	39	289	72
RTOR Reduction (vph)	0	13	0	0	4	0	0	15	0	0	14	0
Lane Group Flow (vph)	68	876	0	80	935	0	155	352	0	39	347	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	44.5	44.5		44.5	44.5		66.5	66.5		66.5	66.5	
Effective Green, g (s)	47.0	47.0		47.0	47.0		69.0	69.0		69.0	69.0	
Actuated g/C Ratio	0.39	0.39		0.39	0.39		0.58	0.58		0.58	0.58	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	92	1312		105	1330		493	1904		489	1907	
v/s Ratio Prot		0.26			0.28			0.11			0.10	
v/s Ratio Perm	0.29			c0.30			c0.18			0.05		
v/c Ratio	0.74	0.67		0.76	0.70		0.31	0.18		0.08	0.18	
Uniform Delay, d1	31.3	30.1		31.6	30.6		13.2	12.1		11.4	12.1	
Progression Factor	0.71	0.62		1.18	1.17		1.00	1.00		1.00	1.00	
Incremental Delay, d2	18.5	0.9		24.2	1.5		1.7	0.2		0.3	0.2	
Delay (s)	40.7	19.4		61.5	37.2		14.9	12.3		11.7	12.3	
Level of Service	D	B		E	D		B	B		B	B	
Approach Delay (s)		20.9			39.1			13.1			12.3	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	459	185	169	564	104	165	666	104	117	702	104
Future Volume (vph)	156	459	185	169	564	104	165	666	104	117	702	104
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3420	1530	1615	3420	1530	1615	4814		1615	4819	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1615	3420	1530	1615	3420	1530	1615	4814		1615	4819	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	166	488	197	180	600	111	176	709	111	124	747	111
RTOR Reduction (vph)	0	0	149	0	0	72	0	15	0	0	15	0
Lane Group Flow (vph)	166	488	48	180	600	39	176	805	0	124	843	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	16.3	26.6	26.6	16.8	27.1	27.1	16.9	44.4		14.2	41.7	
Effective Green, g (s)	18.8	29.1	29.1	19.3	29.6	29.6	19.4	46.9		16.7	44.2	
Actuated g/C Ratio	0.16	0.24	0.24	0.16	0.25	0.25	0.16	0.39		0.14	0.37	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	253	829	371	259	843	377	261	1881		224	1774	
v/s Ratio Prot	0.10	0.14		c0.11	c0.18		c0.11	0.17		0.08	c0.18	
v/s Ratio Perm			0.03			0.03						
v/c Ratio	0.66	0.59	0.13	0.69	0.71	0.10	0.67	0.43		0.55	0.48	
Uniform Delay, d1	47.6	40.2	35.5	47.6	41.3	35.0	47.3	26.7		48.2	29.0	
Progression Factor	0.56	1.00	4.44	0.87	1.28	2.67	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.5	1.0	0.1	7.7	2.8	0.1	6.7	0.7		2.9	0.9	
Delay (s)	32.3	41.3	158.0	49.2	55.8	93.6	54.0	27.4		51.1	29.9	
Level of Service	C	D	F	D	E	F	D	C		D	C	
Approach Delay (s)		66.6			59.1			32.1			32.6	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	135	495	427	40	110	207
Future Volume (vph)	135	495	427	40	110	207
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.93	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.97	1.00
Satd. Flow (prot)	1615	3420	3420	1530	2806	1392
Flt Permitted	0.21	1.00	1.00	1.00	0.97	1.00
Satd. Flow (perm)	358	3420	3420	1530	2806	1392
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	153	562	485	45	125	235
RTOR Reduction (vph)	0	0	0	35	49	48
Lane Group Flow (vph)	153	563	485	10	194	69
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	43.1	43.1	23.4	23.4	67.9	67.9
Effective Green, g (s)	45.6	45.6	25.9	25.9	70.4	70.4
Actuated g/C Ratio	0.38	0.38	0.22	0.22	0.59	0.59
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	321	1299	738	330	1646	816
v/s Ratio Prot	c0.07	0.16	c0.14		c0.07	
v/s Ratio Perm	0.11			0.01		0.05
v/c Ratio	0.48	0.43	0.66	0.03	0.12	0.08
Uniform Delay, d1	26.7	27.6	43.0	37.1	11.0	10.8
Progression Factor	1.20	1.22	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2	2.1	0.0	0.1	0.2
Delay (s)	32.9	33.8	45.1	37.2	11.2	11.0
Level of Service	C	C	D	D	B	B
Approach Delay (s)		33.6	44.4		11.1	
Approach LOS		C	D		B	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	289	8	259	25	24	2	126	1080	16	7	927	197
Future Volume (vph)	289	8	259	25	24	2	126	1080	16	7	927	197
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1534	1633	1530	1615	3420	1530	1615	4903		1615	3420	1530
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1534	1633	1530	1615	3420	1530	1615	4903		1615	3420	1530
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	328	9	294	28	27	2	143	1227	18	8	1053	224
RTOR Reduction (vph)	0	0	150	0	0	2	0	1	0	0	0	61
Lane Group Flow (vph)	167	170	144	28	27	0	143	1244	0	8	1053	163
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	20.8	20.8	37.7	6.7	6.7	6.7	16.9	86.0		1.5	70.6	91.4
Effective Green, g (s)	23.3	23.3	42.7	9.2	9.2	9.2	19.4	88.5		4.0	73.1	96.4
Actuated g/C Ratio	0.18	0.18	0.32	0.07	0.07	0.07	0.15	0.67		0.03	0.55	0.72
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	268	286	491	111	236	105	235	3262		48	1879	1131
v/s Ratio Prot	c0.11	0.10	0.04	c0.02	0.01		c0.09	0.25		0.00	c0.31	0.03
v/s Ratio Perm			0.05			0.00						0.08
v/c Ratio	0.62	0.59	0.29	0.25	0.11	0.00	0.61	0.38		0.17	0.56	0.14
Uniform Delay, d1	50.8	50.5	33.8	58.6	58.1	57.6	53.2	10.0		62.9	19.5	5.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.5	3.3	0.3	1.2	0.2	0.0	4.4	0.3		1.6	1.2	0.1
Delay (s)	55.2	53.8	34.2	59.8	58.3	57.6	57.7	10.3		64.5	20.7	5.7
Level of Service	E	D	C	E	E	E	E	B		E	C	A
Approach Delay (s)		45.0			59.0			15.2			18.4	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	133.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	318	281	0	0	0	0	352	263	172	483	0
Future Volume (veh/h)	160	318	281	0	0	0	0	352	263	172	483	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800				0	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	186	370	327				0	409	306	200	562	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	908	1009	858				0	925	432	316	1388	0
Arrive On Green	0.56	0.56	0.56				0.00	0.28	0.28	0.11	0.41	0.00
Sat Flow, veh/h	1619	1800	1530				0	3438	1530	2956	3510	0
Grp Volume(v), veh/h	186	370	327				0	409	306	200	562	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1530				0	1638	1530	1478	1710	0
Q Serve(g_s), s	6.8	13.6	14.3				0.0	12.3	21.5	7.8	14.0	0.0
Cycle Q Clear(g_c), s	6.8	13.6	14.3				0.0	12.3	21.5	7.8	14.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	908	1009	858				0	925	432	316	1388	0
V/C Ratio(X)	0.20	0.37	0.38				0.00	0.44	0.71	0.63	0.40	0.00
Avail Cap(c_a), veh/h	908	1009	858				0	1160	542	727	2109	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.87	0.87	0.00
Uniform Delay (d), s/veh	13.1	14.6	14.7				0.0	35.3	38.6	51.3	25.3	0.0
Incr Delay (d2), s/veh	0.5	1.0	1.3				0.0	0.3	3.1	1.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	7.1	6.3				0.0	5.6	9.5	3.2	6.7	0.0
LnGrp Delay(d),s/veh	13.6	15.6	16.0				0.0	35.6	41.8	53.2	25.5	0.0
LnGrp LOS	B	B	B					D	D	D	C	
Approach Vol, veh/h		883						715			762	
Approach Delay, s/veh		15.3						38.3			32.8	
Approach LOS		B						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			14.8	35.9		69.3		50.7
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			9.8	23.5		16.3		16.0
Green Ext Time (p_c), s			0.6	7.8		5.2		11.8

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.37	2.16	2.63	2.69
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	883	0	715	762
Effct. Green for Bike (s)	73.4	0.0	24.7	42.6
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1223	0	412	710
Bicycle Delay (s/bike)	9.0	0.0	37.8	25.0
Bicycle Compliance	Good		Poor	Fair
Bicycle LOS Score	3.68	0.00	2.40	3.06
Bicycle LOS	D		B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	379	280	481	190	341	0	0	296	23
Future Volume (veh/h)	0	0	0	379	280	481	190	341	0	0	296	23
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1700	1800	1800	1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h				474	538	476	238	426	0	0	370	29
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1007	1119	951	294	1180	0	0	866	66
Arrive On Green				0.62	0.62	0.62	0.18	0.34	0.00	0.00	0.15	0.15
Sat Flow, veh/h				1619	1800	1530	1619	3510	0	0	6163	453
Grp Volume(v), veh/h				474	538	476	238	426	0	0	289	110
Grp Sat Flow(s),veh/h/ln				1619	1800	1530	1619	1710	0	0	1548	1720
Q Serve(g_s), s				18.8	19.4	20.5	16.9	11.2	0.0	0.0	6.8	7.0
Cycle Q Clear(g_c), s				18.8	19.4	20.5	16.9	11.2	0.0	0.0	6.8	7.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.26
Lane Grp Cap(c), veh/h				1007	1119	951	294	1180	0	0	680	252
V/C Ratio(X)				0.47	0.48	0.50	0.81	0.36	0.00	0.00	0.42	0.44
Avail Cap(c_a), veh/h				1007	1119	951	398	2109	0	0	1645	609
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.80	0.80	0.00	0.00	0.58	0.58
Uniform Delay (d), s/veh				12.1	12.2	12.5	47.1	29.4	0.0	0.0	46.6	46.7
Incr Delay (d2), s/veh				1.6	1.5	1.9	7.0	0.1	0.0	0.0	0.2	0.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.7	10.0	9.1	8.1	5.3	0.0	0.0	2.9	3.4
LnGrp Delay(d),s/veh				13.7	13.7	14.3	54.1	29.6	0.0	0.0	46.9	47.4
LnGrp LOS				B	B	B	D	C			D	D
Approach Vol, veh/h					1488			664			399	
Approach Delay, s/veh					13.9			38.4			47.0	
Approach LOS					B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		76.6		43.4			23.8	19.6
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		39.5		71.5			27.0	40.0
Max Q Clear Time (g_c+I1), s		22.5		13.2			18.9	9.0
Green Ext Time (p_c), s		6.6		6.5			0.4	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	106.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.16	2.42	2.52	2.60
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	1425	664	399
Effct. Green for Bike (s)	0.0	73.8	42.2	15.6
Cross Street Width (ft)	75.9	106.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	1230	703	260
Bicycle Delay (s/bike)	0.0	8.9	25.2	45.4
Bicycle Compliance		Good	Fair	Poor
Bicycle LOS Score	0.00	5.54	2.71	2.37
Bicycle LOS		F	B	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	467	799	0	0	348	170	204	2	85	0	0	0
Future Volume (veh/h)	467	799	0	0	348	170	204	2	85	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	502	859	0	0	374	183	248	0	61			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	559	1847	0	0	876	273	1381	0	653			
Arrive On Green	0.35	0.54	0.00	0.00	0.18	0.18	0.43	0.00	0.43			
Sat Flow, veh/h	1619	3510	0	0	5076	1530	3238	0	1530			
Grp Volume(v), veh/h	502	859	0	0	374	183	248	0	61			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1638	1530	1619	0	1530			
Q Serve(g_s), s	35.3	18.5	0.0	0.0	8.1	13.4	5.7	0.0	2.9			
Cycle Q Clear(g_c), s	35.3	18.5	0.0	0.0	8.1	13.4	5.7	0.0	2.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	559	1847	0	0	876	273	1381	0	653			
V/C Ratio(X)	0.90	0.47	0.00	0.00	0.43	0.67	0.18	0.00	0.09			
Avail Cap(c_a), veh/h	877	2565	0	0	942	293	1381	0	653			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.95	0.95	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.3	16.9	0.0	0.0	43.8	46.0	21.4	0.0	20.5			
Incr Delay (d2), s/veh	8.0	0.2	0.0	0.0	0.3	5.1	0.3	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	17.0	8.8	0.0	0.0	3.7	6.0	2.6	0.0	1.3			
LnGrp Delay(d),s/veh	45.3	17.1	0.0	0.0	44.2	51.1	21.7	0.0	20.8			
LnGrp LOS	D	B			D	D	C		C			
Approach Vol, veh/h		1361			557			309				
Approach Delay, s/veh		27.5			46.4			21.5				
Approach LOS		C			D			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		53.2		66.8			43.4	23.4
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		23.5		87.5			62.5	20.5
Max Q Clear Time (g_c+I1), s		7.7		20.5			37.3	15.4
Green Ext Time (p_c), s		0.9		13.1			1.6	3.5

Intersection Summary	
HCM 2010 Ctrl Delay	31.4
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.79	2.62	2.06	2.07
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1361	557	312	0
Effct. Green for Bike (s)	68.1	18.0	47.9	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1135	300	798	0
Bicycle Delay (s/bike)	11.2	43.3	21.7	0.0
Bicycle Compliance	Fair	Poor	Fair	
Bicycle LOS Score	3.26	2.26	3.18	0.00
Bicycle LOS	C	B	C	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	125.4	73.1	103.0	63.0	96.6
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	7	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.80	2.78	2.58	2.30	2.84
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	765	800	281	268	500
Effct. Green for Bike (s)	50.0	53.3	20.5	20.5	15.0
Cross Street Width (ft)	96.6	63.0	73.1	125.4	103.0
Through Lanes Number	1	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	833	888	342	342	250
Bicycle Delay (s/bike)	20.4	18.5	41.3	41.3	45.9
Bicycle Compliance	Fair	Fair	Poor	Poor	Poor
Bicycle LOS Score	4.30	3.18	3.14	3.70	3.96
Bicycle LOS	E	C	C	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	766	181	68	540	29	71	161	53	40	180	41
Future Volume (veh/h)	63	766	181	68	540	29	71	161	53	40	180	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	72	880	208	78	621	33	82	185	61	46	207	47
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	401	1533	362	211	1844	98	449	1042	333	452	1136	253
Arrive On Green	0.37	0.37	0.37	0.56	0.56	0.56	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	747	2747	649	497	3304	175	1080	2550	816	1088	2782	619
Grp Volume(v), veh/h	72	548	540	78	321	333	82	122	124	46	126	128
Grp Sat Flow(s),veh/h/ln	747	1710	1685	497	1710	1769	1080	1710	1656	1088	1710	1691
Q Serve(g_s), s	8.6	30.6	30.7	15.6	12.3	12.3	6.3	5.5	5.7	3.4	5.6	5.8
Cycle Q Clear(g_c), s	20.9	30.6	30.7	46.2	12.3	12.3	12.1	5.5	5.7	9.1	5.6	5.8
Prop In Lane	1.00		0.38	1.00		0.10	1.00		0.49	1.00		0.37
Lane Grp Cap(c), veh/h	401	955	941	211	955	987	449	698	676	452	698	691
V/C Ratio(X)	0.18	0.57	0.57	0.37	0.34	0.34	0.18	0.17	0.18	0.10	0.18	0.19
Avail Cap(c_a), veh/h	482	1140	1124	264	1140	1179	449	698	676	452	698	691
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.55	0.55	0.55	0.84	0.84	0.84	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	26.2	26.2	34.6	14.4	14.4	26.6	22.6	22.7	25.6	22.7	22.7
Incr Delay (d2), s/veh	0.1	0.3	0.3	0.9	0.2	0.2	0.9	0.5	0.6	0.5	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	14.6	14.4	2.2	5.8	6.1	2.0	2.7	2.7	1.1	2.8	2.8
LnGrp Delay(d),s/veh	27.8	26.5	26.5	35.5	14.6	14.6	27.5	23.2	23.3	26.1	23.2	23.3
LnGrp LOS	C	C	C	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1160			732			328			300	
Approach Delay, s/veh		26.6			16.8			24.3			23.7	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.0		69.0		51.0		69.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		33.5		77.5		33.5		77.5
Max Q Clear Time (g_c+I1), s		14.1		32.7		11.1		48.2
Green Ext Time (p_c), s		3.3		20.0		3.5		16.3

Intersection Summary	
HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.69	2.66	2.48	2.44
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1160	732	328	300
Effct. Green for Bike (s)	55.9	55.9	60.1	60.1
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	932	932	1002	1002
Bicycle Delay (s/bike)	17.1	17.1	15.0	15.0
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	3.43	3.08	2.93	2.91
Bicycle LOS	C	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	514	176	151	359	82	149	525	118	110	600	117
Future Volume (veh/h)	110	514	176	151	359	82	149	525	118	110	600	117
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	129	605	207	178	422	96	175	618	139	129	706	138
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	842	377	227	930	416	231	1743	386	185	1673	323
Arrive On Green	0.11	0.25	0.25	0.28	0.54	0.54	0.14	0.43	0.43	0.11	0.40	0.40
Sat Flow, veh/h	1619	3420	1530	1619	3420	1530	1619	4028	891	1619	4135	799
Grp Volume(v), veh/h	129	605	207	178	422	96	175	501	256	129	558	286
Grp Sat Flow(s),veh/h/ln	1619	1710	1530	1619	1710	1530	1619	1638	1643	1619	1638	1659
Q Serve(g_s), s	9.2	19.4	14.2	12.2	9.0	3.9	12.5	12.3	12.6	9.2	14.7	14.9
Cycle Q Clear(g_c), s	9.2	19.4	14.2	12.2	9.0	3.9	12.5	12.3	12.6	9.2	14.7	14.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.54	1.00		0.48
Lane Grp Cap(c), veh/h	185	842	377	227	930	416	231	1418	711	185	1325	671
V/C Ratio(X)	0.70	0.72	0.55	0.78	0.45	0.23	0.76	0.35	0.36	0.70	0.42	0.43
Avail Cap(c_a), veh/h	290	983	440	290	983	440	290	1418	711	290	1325	671
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	0.74	0.74	0.74	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	41.4	39.4	41.5	22.0	20.8	49.5	22.8	22.9	51.1	25.6	25.7
Incr Delay (d2), s/veh	3.3	1.5	0.9	7.8	0.3	0.2	8.6	0.7	1.4	4.7	1.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	9.3	6.0	5.9	4.3	1.6	6.1	5.7	6.0	4.4	6.8	7.2
LnGrp Delay(d),s/veh	54.4	42.9	40.3	49.3	22.2	21.0	58.0	23.5	24.3	55.8	26.6	27.7
LnGrp LOS	D	D	D	D	C	C	E	C	C	E	C	C
Approach Vol, veh/h		941			696			932			973	
Approach Delay, s/veh		43.9			29.0			30.2			30.8	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	53.9	18.8	31.5	19.1	50.5	15.7	34.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	32.0	19.0	32.0	19.0	32.0	19.0	32.0
Max Q Clear Time (g_c+I1), s	11.2	14.6	14.2	21.4	14.5	16.9	11.2	11.0
Green Ext Time (p_c), s	0.2	9.9	0.2	5.6	0.2	9.0	0.2	8.2

Intersection Summary	
HCM 2010 Ctrl Delay	33.8
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.75	2.73	2.90	2.87
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	941	696	932	973
Effct. Green for Bike (s)	30.4	32.6	45.4	43.3
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	507	543	757	722
Bicycle Delay (s/bike)	33.5	31.8	23.2	24.5
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.63	3.43	3.17	3.20
Bicycle LOS	D	C	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	174	742	591	86	57	135
Future Volume (veh/h)	174	742	591	86	57	135
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1600	1800
Adj Flow Rate, veh/h	205	873	695	101	67	159
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	360	1609	1149	514	756	1519
Arrive On Green	0.12	0.47	0.34	0.34	0.50	0.50
Sat Flow, veh/h	1619	3510	3510	1530	1524	3060
Grp Volume(v), veh/h	205	873	695	101	67	159
Grp Sat Flow(s),veh/h/ln	1619	1710	1710	1530	1524	1530
Q Serve(g_s), s	9.2	21.8	20.3	5.6	2.8	3.3
Cycle Q Clear(g_c), s	9.2	21.8	20.3	5.6	2.8	3.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	360	1609	1149	514	756	1519
V/C Ratio(X)	0.57	0.54	0.60	0.20	0.09	0.10
Avail Cap(c_a), veh/h	520	2565	1767	790	756	1519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	0.90	0.90	1.00	1.00
Uniform Delay (d), s/veh	22.3	22.6	33.2	28.3	15.9	16.1
Incr Delay (d2), s/veh	1.0	0.2	0.5	0.2	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	10.3	9.6	2.4	1.2	4.0
LnGrp Delay(d),s/veh	23.3	22.8	33.7	28.5	16.2	16.2
LnGrp LOS	C	C	C	C	B	B
Approach Vol, veh/h		1078	796		226	
Approach Delay, s/veh		22.9	33.0		16.2	
Approach LOS		C	C		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				58.4		61.6	16.1	42.3
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				87.5		23.5	23.5	59.5
Max Q Clear Time (g_c+I1), s				23.8		5.3	11.2	22.3
Green Ext Time (p_c), s				18.0		0.7	0.4	15.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.0
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.70	2.58	2.43
Pedestrian Crosswalk LOS	B	B	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	1078	796	226
Effct. Green for Bike (s)	57.4	35.9	58.6
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	957	598	977
Bicycle Delay (s/bike)	16.3	29.5	15.7
Bicycle Compliance	Fair	Fair	Fair
Bicycle LOS Score	3.37	3.15	2.66
Bicycle LOS	C	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	78	195	21	18	2	226	743	112	15	968	267
Future Volume (veh/h)	143	78	195	21	18	2	226	743	112	15	968	267
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	126	140	222	24	20	2	257	844	127	17	1100	303
Adj No. of Lanes	1	1	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	261	290	494	80	169	76	262	2990	448	59	1941	1115
Arrive On Green	0.16	0.16	0.16	0.05	0.05	0.05	0.16	0.69	0.69	0.04	0.57	0.57
Sat Flow, veh/h	1619	1800	1530	1619	3420	1530	1619	4316	646	1619	3420	1530
Grp Volume(v), veh/h	126	140	222	24	20	2	257	640	331	17	1100	303
Grp Sat Flow(s),veh/h/ln	1619	1800	1530	1619	1710	1530	1619	1638	1686	1619	1710	1530
Q Serve(g_s), s	9.4	9.4	15.3	1.9	0.7	0.2	21.0	9.9	10.0	1.4	27.3	8.9
Cycle Q Clear(g_c), s	9.4	9.4	15.3	1.9	0.7	0.2	21.0	9.9	10.0	1.4	27.3	8.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	261	290	494	80	169	76	262	2270	1168	59	1941	1115
V/C Ratio(X)	0.48	0.48	0.45	0.30	0.12	0.03	0.98	0.28	0.28	0.29	0.57	0.27
Avail Cap(c_a), veh/h	420	467	644	420	887	397	262	2270	1168	262	1941	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.7	50.7	35.7	61.0	60.4	60.2	55.6	7.8	7.8	62.4	18.3	6.1
Incr Delay (d2), s/veh	1.2	1.1	0.6	2.1	0.3	0.1	50.4	0.3	0.6	2.7	1.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	4.8	6.6	0.9	0.4	0.1	13.1	4.5	4.8	0.7	13.2	6.2
LnGrp Delay(d),s/veh	52.0	51.8	36.2	63.0	60.7	60.3	106.0	8.1	8.4	65.1	19.5	6.7
LnGrp LOS	D	D	D	E	E	E	F	A	A	E	B	A
Approach Vol, veh/h		488			46			1228			1420	
Approach Delay, s/veh		44.8			61.9			28.7			17.3	
Approach LOS		D			E			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	94.1		23.4	23.5	77.5		8.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	19.0	32.0		32.0	19.0	32.0		32.0
Max Q Clear Time (g_c+I1), s	3.4	12.0		17.3	23.0	29.3		3.9
Green Ext Time (p_c), s	0.0	15.0		1.6	0.0	2.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	26.6
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	66.5	66.5	66.5	66.5
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.53	2.38	2.90	2.96
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	473	46	1228	1420
Effct. Green for Bike (s)	19.6	10.0	96.3	67.5
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	295	150	1448	1015
Bicycle Delay (s/bike)	48.3	56.9	5.1	16.1
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	3.46	2.90	3.15	3.67
Bicycle LOS	C	C	C	D

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	318	281	0	0	0	0	352	263	172	483	0
Future Volume (vph)	160	318	281	0	0	0	0	352	263	172	483	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0						2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91						0.91		0.97	0.95	
Frt	1.00	0.93						0.94		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1470	3048						4599		2949	3420	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1470	3048						4599		2949	3420	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	186	370	327	0	0	0	0	409	306	200	562	0
RTOR Reduction (vph)	0	76	0	0	0	0	0	139	0	0	0	0
Lane Group Flow (vph)	167	640	0	0	0	0	0	576	0	200	562	0
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6											
Actuated Green, G (s)	70.8	70.8						22.2		13.5	40.2	
Effective Green, g (s)	73.3	73.3						24.7		16.0	42.7	
Actuated g/C Ratio	0.61	0.61						0.21		0.13	0.36	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	897	1861						946		393	1216	
v/s Ratio Prot								c0.13		c0.07	0.16	
v/s Ratio Perm	0.11	0.21										
v/c Ratio	0.19	0.34						0.61		0.51	0.46	
Uniform Delay, d1	10.3	11.5						43.3		48.3	29.8	
Progression Factor	1.00	1.00						1.00		1.28	0.98	
Incremental Delay, d2	0.5	0.5						1.1		1.0	0.3	
Delay (s)	10.7	12.0						44.4		63.1	29.3	
Level of Service	B	B						D		E	C	
Approach Delay (s)		11.8			0.0			44.4			38.2	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	379	280	481	190	341	0	0	296	23
Future Volume (vph)	0	0	0	379	280	481	190	341	0	0	296	23
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.95	0.85	1.00	1.00			0.99	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1615	1633	1454	1615	3420			6124	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1615	1633	1454	1615	3420			6124	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	0	0	0	474	350	601	238	426	0	0	370	29
RTOR Reduction (vph)	0	0	0	0	8	172	0	0	0	0	13	0
Lane Group Flow (vph)	0	0	0	474	492	279	238	426	0	0	386	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				71.3	71.3	71.3	22.1	39.7			13.1	
Effective Green, g (s)				73.8	73.8	73.8	24.6	42.2			15.6	
Actuated g/C Ratio				0.61	0.61	0.61	0.21	0.35			0.13	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				993	1004	894	331	1202			796	
v/s Ratio Prot					c0.30		c0.15	0.12			c0.06	
v/s Ratio Perm				0.29		0.19						
v/c Ratio				0.48	0.49	0.31	0.72	0.35			0.48	
Uniform Delay, d1				12.6	12.7	11.0	44.5	28.8			48.5	
Progression Factor				1.00	1.00	1.00	1.57	0.79			0.60	
Incremental Delay, d2				1.6	1.7	0.9	7.1	0.2			0.4	
Delay (s)				14.2	14.4	11.9	77.1	23.1			29.3	
Level of Service				B	B	B	E	C			C	
Approach Delay (s)		0.0			13.6			42.4			29.3	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	467	799	0	0	348	170	204	2	85	0	0	0
Future Volume (vph)	467	799	0	0	348	170	204	2	85	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4914	1530	1534	1549	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4914	1530	1534	1549	1454			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	502	859	0	0	374	183	219	2	91	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	156	0	2	49	0	0	0
Lane Group Flow (vph)	502	859	0	0	374	27	116	112	33	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	45.7	65.7			15.5	15.5	45.3	45.3	45.3			
Effective Green, g (s)	48.2	68.2			18.0	18.0	47.8	47.8	47.8			
Actuated g/C Ratio	0.40	0.57			0.15	0.15	0.40	0.40	0.40			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	648	1943			737	229	611	617	579			
v/s Ratio Prot	c0.31	0.25			c0.08							
v/s Ratio Perm						0.02	c0.08	0.07	0.02			
v/c Ratio	0.77	0.44			0.51	0.12	0.19	0.18	0.06			
Uniform Delay, d1	31.2	14.9			46.9	44.1	23.5	23.4	22.2			
Progression Factor	1.00	1.00			0.83	3.09	1.00	1.00	1.00			
Incremental Delay, d2	5.8	0.2			0.5	0.2	0.7	0.6	0.2			
Delay (s)	36.9	15.1			39.4	136.7	24.2	24.1	22.4			
Level of Service	D	B			D	F	C	C	C			
Approach Delay (s)		23.2			71.4			23.7			0.0	
Approach LOS		C			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	63	564	61	63	218	425	14	12	52	119	70	39
Future Volume (vph)	63	564	61	63	218	425	14	12	52	119	70	39
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800	1800	1800	1600	1800	1800	1700
Total Lost time (s)	2.0	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	1.00	1.00		0.97	0.95			0.97	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	1615	1800	1530		2949	3403			2949	1800	1530	1615
Flt Permitted	0.95	1.00	1.00		0.95	1.00			0.95	1.00	1.00	0.95
Satd. Flow (perm)	1615	1800	1530		2949	3403			2949	1800	1530	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	70	627	68	70	242	472	16	13	58	132	78	43
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	54	0
Lane Group Flow (vph)	70	627	68	0	312	488	0	0	71	132	24	43
Turn Type	Prot	NA	Prot	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot
Protected Phases	7	4	4	3	3	8		5	5	2	3	1
Permitted Phases											2	
Actuated Green, G (s)	11.2	47.5	47.5		14.5	50.8			5.0	18.0	32.5	5.0
Effective Green, g (s)	13.7	50.0	50.0		17.0	53.3			7.5	20.5	37.5	7.5
Actuated g/C Ratio	0.11	0.42	0.42		0.14	0.44			0.06	0.17	0.31	0.06
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5			4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	184	750	637		417	1511			184	307	503	100
v/s Ratio Prot	0.04	c0.35	0.04		c0.11	0.14			0.02	c0.07	0.01	c0.03
v/s Ratio Perm											0.01	
v/c Ratio	0.38	0.84	0.11		0.75	0.32			0.39	0.43	0.05	0.43
Uniform Delay, d1	49.2	31.3	21.4		49.4	21.6			54.0	44.5	28.8	54.2
Progression Factor	0.79	1.21	1.03		0.76	1.56			1.00	1.00	1.00	1.00
Incremental Delay, d2	5.7	10.4	0.3		11.4	0.6			6.0	4.3	0.2	12.9
Delay (s)	44.7	48.1	22.4		49.0	34.4			60.1	48.9	29.0	67.1
Level of Service	D	D	C		D	C			E	D	C	E
Approach Delay (s)		45.5				40.1				46.2		
Approach LOS		D				D				D		

Intersection Summary			
HCM 2000 Control Delay	46.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations							
Traffic Volume (vph)	139	29	35	4	110	290	47
Future Volume (vph)	139	29	35	4	110	290	47
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1800	1800
Total Lost time (s)	2.0			2.0	2.0	2.0	
Lane Util. Factor	0.95			1.00	1.00	0.88	
Frt	0.95			1.00	1.00	0.85	
Flt Protected	1.00			0.95	0.95	1.00	
Satd. Flow (prot)	3258			1520	1520	2693	
Flt Permitted	1.00			0.95	0.95	1.00	
Satd. Flow (perm)	3258			1520	1520	2693	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	154	32	39	4	122	322	52
RTOR Reduction (vph)	15	0	0	0	0	119	0
Lane Group Flow (vph)	210	0	0	4	122	255	0
Turn Type	NA			Prot	Prot	Perm	
Protected Phases	6			9	9		
Permitted Phases						9	
Actuated Green, G (s)	18.0			12.5	12.5	12.5	
Effective Green, g (s)	20.5			15.0	15.0	15.0	
Actuated g/C Ratio	0.17			0.12	0.12	0.12	
Clearance Time (s)	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	556			190	190	336	
v/s Ratio Prot	0.06			0.00	0.08		
v/s Ratio Perm						c0.09	
v/c Ratio	0.38			0.02	0.64	0.76	
Uniform Delay, d1	44.1			46.1	49.9	50.8	
Progression Factor	1.00			0.93	0.92	0.88	
Incremental Delay, d2	2.0			0.2	14.9	14.3	
Delay (s)	46.0			42.9	60.8	58.8	
Level of Service	D			D	E	E	
Approach Delay (s)	49.4				59.2		
Approach LOS	D				E		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	766	181	68	540	29	71	161	53	40	180	41
Future Volume (vph)	63	766	181	68	540	29	71	161	53	40	180	41
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3322		1615	3394		1615	3293		1615	3325	
Flt Permitted	0.31	1.00		0.13	1.00		0.57	1.00		0.57	1.00	
Satd. Flow (perm)	524	3322		224	3394		963	3293		974	3325	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	72	880	208	78	621	33	82	185	61	46	207	47
RTOR Reduction (vph)	0	27	0	0	5	0	0	19	0	0	11	0
Lane Group Flow (vph)	72	1061	0	78	649	0	82	227	0	46	243	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	53.4	53.4		53.4	53.4		57.6	57.6		57.6	57.6	
Effective Green, g (s)	55.9	55.9		55.9	55.9		60.1	60.1		60.1	60.1	
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.50	0.50		0.50	0.50	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	244	1547		104	1581		482	1649		487	1665	
v/s Ratio Prot		0.32			0.19			0.07			0.07	
v/s Ratio Perm	0.14			c0.35			c0.09			0.05		
v/c Ratio	0.30	0.69		0.75	0.41		0.17	0.14		0.09	0.15	
Uniform Delay, d1	19.8	25.2		26.3	21.2		16.3	16.1		15.7	16.1	
Progression Factor	0.40	0.47		0.96	0.84		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.9		23.4	0.2		0.8	0.2		0.4	0.2	
Delay (s)	8.4	12.6		48.7	18.0		17.1	16.2		16.1	16.3	
Level of Service	A	B		D	B		B	B		B	B	
Approach Delay (s)		12.4			21.3			16.5			16.3	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	514	176	151	359	82	149	525	118	110	600	117
Future Volume (vph)	110	514	176	151	359	82	149	525	118	110	600	117
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3420	1530	1615	3420	1530	1615	4779		1615	4793	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1615	3420	1530	1615	3420	1530	1615	4779		1615	4793	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	129	605	207	178	422	96	175	618	139	129	706	138
RTOR Reduction (vph)	0	0	155	0	0	69	0	26	0	0	22	0
Lane Group Flow (vph)	129	605	52	178	422	27	175	731	0	129	822	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	14.5	27.9	27.9	16.7	30.1	30.1	16.6	42.9		14.5	40.8	
Effective Green, g (s)	17.0	30.4	30.4	19.2	32.6	32.6	19.1	45.4		17.0	43.3	
Actuated g/C Ratio	0.14	0.25	0.25	0.16	0.27	0.27	0.16	0.38		0.14	0.36	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	228	866	387	258	929	415	257	1808		228	1729	
v/s Ratio Prot	0.08	c0.18		c0.11	0.12		c0.11	0.15		0.08	c0.17	
v/s Ratio Perm			0.03			0.02						
v/c Ratio	0.57	0.70	0.14	0.69	0.45	0.06	0.68	0.40		0.57	0.48	
Uniform Delay, d1	48.1	40.6	34.6	47.6	36.3	32.4	47.6	27.4		48.1	29.6	
Progression Factor	0.67	1.23	4.74	0.89	1.60	4.75	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.9	2.3	0.1	7.2	0.3	0.1	7.2	0.7		3.2	0.9	
Delay (s)	34.9	52.3	164.2	49.3	58.3	153.9	54.8	28.0		51.3	30.5	
Level of Service	C	D	F	D	E	F	D	C		D	C	
Approach Delay (s)		74.5			69.2			33.1			33.3	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	174	742	591	86	57	135
Future Volume (vph)	174	742	591	86	57	135
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.92	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.98	1.00
Satd. Flow (prot)	1615	3420	3420	1530	2787	1392
Flt Permitted	0.17	1.00	1.00	1.00	0.98	1.00
Satd. Flow (perm)	286	3420	3420	1530	2787	1392
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	205	873	695	101	67	159
RTOR Reduction (vph)	0	0	0	71	41	40
Lane Group Flow (vph)	205	873	695	30	106	39
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	55.0	55.0	33.4	33.4	56.0	56.0
Effective Green, g (s)	57.5	57.5	35.9	35.9	58.5	58.5
Actuated g/C Ratio	0.48	0.48	0.30	0.30	0.49	0.49
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	354	1638	1023	457	1358	678
v/s Ratio Prot	c0.09	0.26	c0.20		c0.04	
v/s Ratio Perm	0.18			0.02		0.03
v/c Ratio	0.58	0.53	0.68	0.07	0.08	0.06
Uniform Delay, d1	21.4	21.9	37.0	30.1	16.4	16.2
Progression Factor	1.10	1.21	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.3	1.8	0.1	0.1	0.2
Delay (s)	25.6	26.8	38.8	30.1	16.5	16.4
Level of Service	C	C	D	C	B	B
Approach Delay (s)		26.6	37.7		16.5	
Approach LOS		C	D		B	

Intersection Summary			
HCM 2000 Control Delay	29.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	78	195	21	18	2	226	743	112	15	968	267
Future Volume (vph)	143	78	195	21	18	2	226	743	112	15	968	267
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1534	1684	1530	1615	3420	1530	1615	4818		1615	3420	1530
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1534	1684	1530	1615	3420	1530	1615	4818		1615	3420	1530
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	162	89	222	24	20	2	257	844	127	17	1100	303
RTOR Reduction (vph)	0	0	135	0	0	2	0	6	0	0	0	103
Lane Group Flow (vph)	124	128	87	24	20	0	257	965	0	17	1100	200
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	17.1	17.1	46.6	5.2	5.2	5.2	29.5	89.3		3.4	63.2	80.3
Effective Green, g (s)	19.6	19.6	51.6	7.7	7.7	7.7	32.0	91.8		5.9	65.7	85.3
Actuated g/C Ratio	0.15	0.15	0.39	0.06	0.06	0.06	0.24	0.69		0.04	0.49	0.64
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	226	248	593	93	198	88	388	3325		71	1689	1004
v/s Ratio Prot	c0.08	0.08	0.04	c0.01	0.01		c0.16	0.20		0.01	c0.32	0.03
v/s Ratio Perm			0.02			0.00						0.10
v/c Ratio	0.55	0.52	0.15	0.26	0.10	0.00	0.66	0.29		0.24	0.65	0.20
Uniform Delay, d1	52.6	52.3	26.4	59.9	59.4	59.0	45.6	8.0		61.4	25.1	9.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.7	1.8	0.1	1.5	0.2	0.0	4.2	0.2		1.7	2.0	0.1
Delay (s)	55.3	54.1	26.5	61.4	59.6	59.0	49.8	8.2		63.1	27.1	9.9
Level of Service	E	D	C	E	E	E	D	A		E	C	A
Approach Delay (s)		41.5			60.5			16.9			23.8	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	133.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	348	305	0	0	0	1	458	250	412	566	0
Future Volume (veh/h)	227	348	305	0	0	0	1	458	250	412	566	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800				1800	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	244	374	328				1	492	269	443	609	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	779	866	736				30	920	389	559	1660	0
Arrive On Green	0.48	0.48	0.48				0.28	0.28	0.28	0.19	0.49	0.00
Sat Flow, veh/h	1619	1800	1530				1	3288	1392	2956	3510	0
Grp Volume(v), veh/h	244	374	328				270	223	269	443	609	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1530				1798	1491	1392	1478	1710	0
Q Serve(g_s), s	11.0	16.3	17.0				0.0	15.2	20.7	17.2	13.4	0.0
Cycle Q Clear(g_c), s	11.0	16.3	17.0				15.2	15.2	20.7	17.2	13.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	779	866	736				533	417	389	559	1660	0
V/C Ratio(X)	0.31	0.43	0.45				0.51	0.54	0.69	0.79	0.37	0.00
Avail Cap(c_a), veh/h	779	866	736				667	528	493	727	2109	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	1.00	0.81	0.81	0.00
Uniform Delay (d), s/veh	19.0	20.4	20.5				36.6	36.6	38.6	46.4	19.3	0.0
Incr Delay (d2), s/veh	1.0	1.6	1.9				0.7	1.1	2.9	3.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	8.5	7.6				7.7	6.4	8.2	7.3	6.3	0.0
LnGrp Delay(d),s/veh	20.1	21.9	22.5				37.4	37.7	41.5	50.2	19.4	0.0
LnGrp LOS	C	C	C				D	D	D	D	B	
Approach Vol, veh/h		946						762			1052	
Approach Delay, s/veh		21.7						38.9			32.4	
Approach LOS		C						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			24.7	35.6		59.8		60.2
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			19.2	22.7		19.0		15.4
Green Ext Time (p_c), s			1.0	8.4		5.3		12.4

Intersection Summary	
HCM 2010 Ctrl Delay	30.5
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.38	2.27	2.65	2.76
Pedestrian Crosswalk LOS	B	B	B	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	946	0	762	1052
Effct. Green for Bike (s)	60.9	0.0	27.9	55.1
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1015	0	465	918
Bicycle Delay (s/bike)	14.6	0.0	35.3	17.6
Bicycle Compliance	Fair		Poor	Fair
Bicycle LOS Score	3.73	0.00	2.43	3.30
Bicycle LOS	D		B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	287	307	356	227	458	0	0	685	202
Future Volume (veh/h)	0	0	0	287	307	356	227	458	0	0	685	202
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1700	1800	1800	1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h				293	350	338	232	467	0	0	699	206
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				841	935	795	289	1529	0	0	1218	346
Arrive On Green				0.52	0.52	0.52	0.18	0.45	0.00	0.00	0.25	0.25
Sat Flow, veh/h				1619	1800	1530	1619	3510	0	0	5083	1371
Grp Volume(v), veh/h				293	350	338	232	467	0	0	671	234
Grp Sat Flow(s),veh/h/ln				1619	1800	1530	1619	1710	0	0	1548	1558
Q Serve(g_s), s				12.7	13.9	16.3	16.5	10.5	0.0	0.0	15.2	15.9
Cycle Q Clear(g_c), s				12.7	13.9	16.3	16.5	10.5	0.0	0.0	15.2	15.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.88
Lane Grp Cap(c), veh/h				841	935	795	289	1529	0	0	1171	393
V/C Ratio(X)				0.35	0.37	0.43	0.80	0.31	0.00	0.00	0.57	0.60
Avail Cap(c_a), veh/h				841	935	795	398	2109	0	0	1645	552
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.77	0.77	0.00	0.00	0.42	0.42
Uniform Delay (d), s/veh				16.9	17.2	17.8	47.3	21.2	0.0	0.0	39.2	39.5
Incr Delay (d2), s/veh				1.1	1.1	1.7	6.4	0.1	0.0	0.0	0.2	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.0	7.2	7.2	7.9	4.9	0.0	0.0	6.5	6.9
LnGrp Delay(d),s/veh				18.1	18.3	19.4	53.7	21.3	0.0	0.0	39.4	40.1
LnGrp LOS				B	B	B	D	C			D	D
Approach Vol, veh/h					981			699			905	
Approach Delay, s/veh					18.6			32.1			39.6	
Approach LOS					B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		64.3		55.7			23.4	32.3
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		39.5		71.5			27.0	40.0
Max Q Clear Time (g_c+I1), s		18.3		12.5			18.5	17.9
Green Ext Time (p_c), s		4.2		13.2			0.4	9.9

Intersection Summary	
HCM 2010 Ctrl Delay	29.6
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	106.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.21	2.28	2.56	2.66
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	969	699	905
Effct. Green for Bike (s)	0.0	61.7	54.3	28.1
Cross Street Width (ft)	75.9	106.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	1028	905	468
Bicycle Delay (s/bike)	0.0	14.2	18.0	35.2
Bicycle Compliance		Fair	Fair	Poor
Bicycle LOS Score	0.00	4.79	2.73	2.58
Bicycle LOS		E	B	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	560	753	0	0	605	482	253	5	80	0	0	0
Future Volume (veh/h)	560	753	0	0	605	482	253	5	80	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	596	801	0	0	644	513	297	0	58			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	649	2339	0	0	1310	408	915	0	432			
Arrive On Green	0.40	0.68	0.00	0.00	0.27	0.27	0.28	0.00	0.28			
Sat Flow, veh/h	1619	3510	0	0	5076	1530	3238	0	1530			
Grp Volume(v), veh/h	596	801	0	0	644	513	297	0	58			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1638	1530	1619	0	1530			
Q Serve(g_s), s	41.9	11.6	0.0	0.0	13.3	32.0	8.7	0.0	3.4			
Cycle Q Clear(g_c), s	41.9	11.6	0.0	0.0	13.3	32.0	8.7	0.0	3.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	649	2339	0	0	1310	408	915	0	432			
V/C Ratio(X)	0.92	0.34	0.00	0.00	0.49	1.26	0.32	0.00	0.13			
Avail Cap(c_a), veh/h	796	2651	0	0	1310	408	915	0	432			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.78	0.78	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.1	7.8	0.0	0.0	37.1	44.0	34.0	0.0	32.1			
Incr Delay (d2), s/veh	13.8	0.1	0.0	0.0	0.2	130.7	0.9	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	21.2	5.5	0.0	0.0	6.0	28.3	4.0	0.0	1.5			
LnGrp Delay(d),s/veh	47.9	7.9	0.0	0.0	37.4	174.7	34.9	0.0	32.7			
LnGrp LOS	D	A			D	F	C		C			
Approach Vol, veh/h		1397			1157			355				
Approach Delay, s/veh		25.0			98.3			34.6				
Approach LOS		C			F			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		35.9		84.1			50.1	34.0
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		20.5		90.5			56.5	29.5
Max Q Clear Time (g_c+I1), s		10.7		13.6			43.9	34.0
Green Ext Time (p_c), s		0.9		20.7			1.7	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	55.3
HCM 2010 LOS	E

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.85	2.72	2.08	2.28
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1397	1157	359	0
Effct. Green for Bike (s)	82.3	28.1	33.7	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1372	468	562	0
Bicycle Delay (s/bike)	5.9	35.2	31.0	0.0
Bicycle Compliance	Good	Poor	Poor	
Bicycle LOS Score	3.29	2.59	3.26	0.00
Bicycle LOS	C	B	C	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	125.4	73.1	103.0	63.0	96.6
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	7	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.84	2.82	2.68	2.37	2.87
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	656	1137	712	389	575
Effct. Green for Bike (s)	37.5	46.0	28.3	20.5	14.4
Cross Street Width (ft)	96.6	63.0	73.1	125.4	103.0
Through Lanes Number	1	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	625	767	472	342	240
Bicycle Delay (s/bike)	28.4	22.8	35.0	41.3	46.5
Bicycle Compliance	Fair	Fair	Poor	Poor	Poor
Bicycle LOS Score	4.12	3.46	3.85	3.80	4.08
Bicycle LOS	D	C	D	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	730	118	78	829	41	152	283	75	38	282	70
Future Volume (veh/h)	67	730	118	78	829	41	152	283	75	38	282	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	73	793	128	85	901	45	165	308	82	41	307	76
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	239	1477	238	208	1660	83	441	1250	328	437	1271	310
Arrive On Green	0.17	0.17	0.17	0.50	0.50	0.50	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	569	2950	476	582	3315	166	960	2683	703	953	2728	665
Grp Volume(v), veh/h	73	460	461	85	465	481	165	195	195	41	191	192
Grp Sat Flow(s),veh/h/ln	569	1710	1716	582	1710	1771	960	1710	1676	953	1710	1683
Q Serve(g_s), s	14.4	29.5	29.6	15.3	22.4	22.4	15.0	8.2	8.5	3.3	8.0	8.3
Cycle Q Clear(g_c), s	36.8	29.5	29.6	44.8	22.4	22.4	23.3	8.2	8.5	11.7	8.0	8.3
Prop In Lane	1.00		0.28	1.00		0.09	1.00		0.42	1.00		0.40
Lane Grp Cap(c), veh/h	239	856	859	208	856	887	441	797	781	437	797	784
V/C Ratio(X)	0.31	0.54	0.54	0.41	0.54	0.54	0.37	0.24	0.25	0.09	0.24	0.25
Avail Cap(c_a), veh/h	257	912	915	227	912	944	441	797	781	437	797	784
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.55	0.55	0.55	0.65	0.65	0.65	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	37.3	37.3	39.1	20.5	20.5	26.3	19.3	19.4	22.9	19.3	19.3
Incr Delay (d2), s/veh	0.4	0.3	0.3	0.8	0.4	0.4	2.4	0.7	0.8	0.4	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	14.1	14.2	2.5	10.7	11.1	4.3	4.1	4.1	0.9	4.0	4.0
LnGrp Delay(d),s/veh	51.2	37.6	37.6	39.9	20.9	20.9	28.8	20.0	20.1	23.3	20.0	20.1
LnGrp LOS	D	D	D	D	C	C	C	C	C	C	B	C
Approach Vol, veh/h		994			1031			555			424	
Approach Delay, s/veh		38.6			22.5			22.7			20.3	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		57.9		62.1		57.9		62.1
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		49.5		61.5		49.5		61.5
Max Q Clear Time (g_c+I1), s		25.3		38.8		13.7		46.8
Green Ext Time (p_c), s		6.1		14.8		6.6		10.7

Intersection Summary	
HCM 2010 Ctrl Delay	27.6
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.74	2.70	2.53	2.49
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	994	1031	555	424
Effct. Green for Bike (s)	47.9	47.9	68.1	68.1
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	798	798	1135	1135
Bicycle Delay (s/bike)	21.7	21.7	11.2	11.2
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	3.30	3.33	3.12	3.01
Bicycle LOS	C	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	467	196	175	552	108	175	706	108	123	744	110
Future Volume (veh/h)	165	467	196	175	552	108	175	706	108	123	744	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	176	497	209	186	587	115	186	751	115	131	791	117
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	232	817	366	241	838	375	241	1850	281	187	1715	252
Arrive On Green	0.14	0.24	0.24	0.15	0.24	0.24	0.15	0.43	0.43	0.12	0.40	0.40
Sat Flow, veh/h	1619	3420	1530	1619	3420	1530	1619	4306	654	1619	4328	636
Grp Volume(v), veh/h	176	497	209	186	587	115	186	570	296	131	597	311
Grp Sat Flow(s),veh/h/ln	1619	1710	1530	1619	1710	1530	1619	1638	1685	1619	1638	1688
Q Serve(g_s), s	12.5	15.5	14.4	13.3	18.8	7.4	13.3	14.4	14.6	9.3	16.2	16.3
Cycle Q Clear(g_c), s	12.5	15.5	14.4	13.3	18.8	7.4	13.3	14.4	14.6	9.3	16.2	16.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		0.38
Lane Grp Cap(c), veh/h	232	817	366	241	838	375	241	1408	724	187	1298	669
V/C Ratio(X)	0.76	0.61	0.57	0.77	0.70	0.31	0.77	0.40	0.41	0.70	0.46	0.46
Avail Cap(c_a), veh/h	290	983	440	290	983	440	290	1408	724	290	1298	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.70	0.72	0.72	0.72	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	40.7	40.2	49.1	41.3	37.0	49.1	23.6	23.7	51.1	26.8	26.8
Incr Delay (d2), s/veh	6.3	0.5	1.0	7.3	1.3	0.3	10.0	0.9	1.7	4.7	1.2	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	7.4	6.2	6.4	9.0	3.2	6.6	6.7	7.1	4.4	7.5	8.0
LnGrp Delay(d),s/veh	55.7	41.2	41.2	56.4	42.6	37.3	59.1	24.5	25.4	55.8	27.9	29.1
LnGrp LOS	E	D	D	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		882			888			1052			1039	
Approach Delay, s/veh		44.1			44.8			30.9			31.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	53.6	19.9	30.7	19.9	49.5	19.2	31.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	32.0	19.0	32.0	19.0	32.0	19.0	32.0
Max Q Clear Time (g_c+I1), s	11.3	16.6	15.3	17.5	15.3	18.3	14.5	20.8
Green Ext Time (p_c), s	0.2	9.9	0.2	7.2	0.2	9.1	0.2	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	37.3
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.76	2.74	2.93	2.91
Pedestrian Crosswalk LOS	C	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	882	888	1052	1039
Effct. Green for Bike (s)	28.9	29.3	46.4	43.7
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	482	488	773	728
Bicycle Delay (s/bike)	34.6	34.3	22.6	24.3
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.59	3.59	3.24	3.24
Bicycle LOS	D	D	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	121	699	835	36	101	167
Future Volume (veh/h)	121	699	835	36	101	167
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1600	1800
Adj Flow Rate, veh/h	138	794	949	41	102	204
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	298	1758	1415	633	690	1385
Arrive On Green	0.08	0.51	0.41	0.41	0.45	0.45
Sat Flow, veh/h	1619	3510	3510	1530	1524	3060
Grp Volume(v), veh/h	138	794	949	41	102	204
Grp Sat Flow(s),veh/h/ln	1619	1710	1710	1530	1524	1530
Q Serve(g_s), s	5.4	17.6	27.0	1.9	4.7	4.7
Cycle Q Clear(g_c), s	5.4	17.6	27.0	1.9	4.7	4.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	298	1758	1415	633	690	1385
V/C Ratio(X)	0.46	0.45	0.67	0.06	0.15	0.15
Avail Cap(c_a), veh/h	392	2594	2052	918	690	1385
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.95	0.95	1.00	1.00
Uniform Delay (d), s/veh	20.2	18.4	28.5	21.2	19.3	19.3
Incr Delay (d2), s/veh	0.9	0.1	0.5	0.0	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	8.3	12.9	0.8	2.1	5.3
LnGrp Delay(d),s/veh	21.0	18.6	29.1	21.2	19.7	19.5
LnGrp LOS	C	B	C	C	B	B
Approach Vol, veh/h		932	990		306	
Approach Delay, s/veh		19.0	28.7		19.6	
Approach LOS		B	C		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				63.7		56.3	12.0	51.7
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				88.5		22.5	14.5	69.5
Max Q Clear Time (g_c+I1), s				19.6		6.7	7.4	29.0
Green Ext Time (p_c), s				21.3		0.9	0.2	18.1

Intersection Summary	
HCM 2010 Ctrl Delay	23.4
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.73	2.62	2.42
Pedestrian Crosswalk LOS	B	B	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	932	990	305
Effct. Green for Bike (s)	64.8	47.8	51.2
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	1080	797	853
Bicycle Delay (s/bike)	12.7	21.7	19.7
Bicycle Compliance	Fair	Fair	Fair
Bicycle LOS Score	3.25	3.31	2.73
Bicycle LOS	C	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	305	8	260	27	25	2	127	1145	17	7	983	208
Future Volume (veh/h)	305	8	260	27	25	2	127	1145	17	7	983	208
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	353	0	295	31	28	2	144	1301	19	8	1117	236
Adj No. of Lanes	2	0	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	670	0	501	85	179	80	195	3255	48	46	1916	1174
Arrive On Green	0.21	0.00	0.21	0.05	0.05	0.05	0.12	0.65	0.65	0.03	0.56	0.56
Sat Flow, veh/h	3238	0	1530	1619	3420	1530	1619	4990	73	1619	3420	1530
Grp Volume(v), veh/h	353	0	295	31	28	2	144	854	466	8	1117	236
Grp Sat Flow(s),veh/h/ln	1619	0	1530	1619	1710	1530	1619	1638	1787	1619	1710	1530
Q Serve(g_s), s	12.9	0.0	21.4	2.5	1.0	0.2	11.4	16.3	16.3	0.6	28.4	5.7
Cycle Q Clear(g_c), s	12.9	0.0	21.4	2.5	1.0	0.2	11.4	16.3	16.3	0.6	28.4	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	670	0	501	85	179	80	195	2137	1166	46	1916	1174
V/C Ratio(X)	0.53	0.00	0.59	0.37	0.16	0.02	0.74	0.40	0.40	0.17	0.58	0.20
Avail Cap(c_a), veh/h	840	0	581	420	887	397	262	2137	1166	262	1916	1174
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.00	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	0.0	37.3	60.9	60.2	59.8	56.5	10.9	10.9	63.1	19.1	4.3
Incr Delay (d2), s/veh	0.6	0.0	1.1	2.6	0.4	0.1	7.3	0.6	1.0	1.8	1.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	9.2	1.2	0.5	0.1	5.5	7.5	8.4	0.3	13.7	4.6
LnGrp Delay(d),s/veh	47.6	0.0	38.4	63.5	60.6	59.9	63.7	11.4	11.9	64.9	20.4	4.7
LnGrp LOS	D		D	E	E	E	E	B	B	E	C	A
Approach Vol, veh/h		648			61			1464			1361	
Approach Delay, s/veh		43.4			62.0			16.7			17.9	
Approach LOS		D			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	88.7		29.5	18.0	76.5		9.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	19.0	32.0		32.0	19.0	32.0		32.0
Max Q Clear Time (g_c+I1), s	2.6	18.3		23.4	13.4	30.4		4.5
Green Ext Time (p_c), s	0.0	11.8		1.6	0.2	1.6		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	22.9
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	66.5	66.5	66.5	66.5
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.53	2.34	2.95	3.04
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	651	61	1464	1361
Effct. Green for Bike (s)	24.3	10.6	91.7	72.6
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	365	159	1379	1092
Bicycle Delay (s/bike)	44.4	56.3	6.4	13.7
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	3.75	2.91	3.28	3.62
Bicycle LOS	D	C	C	D

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	348	305	0	0	0	1	458	250	412	566	0
Future Volume (vph)	227	348	305	0	0	0	1	458	250	412	566	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0						2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91						0.91		0.97	0.95	
Frt	1.00	0.93						0.95		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1470	3049						4653		2949	3420	
Flt Permitted	0.95	1.00						0.94		0.95	1.00	
Satd. Flow (perm)	1470	3049						4372		2949	3420	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	244	374	328	0	0	0	1	492	269	443	609	0
RTOR Reduction (vph)	0	95	0	0	0	0	0	98	0	0	0	0
Lane Group Flow (vph)	220	631	0	0	0	0	0	664	0	443	609	0
Turn Type	Perm	NA					Perm	NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6						4					
Actuated Green, G (s)	58.4	58.4						25.4		22.7	52.6	
Effective Green, g (s)	60.9	60.9						27.9		25.2	55.1	
Actuated g/C Ratio	0.51	0.51						0.23		0.21	0.46	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	746	1547						1016		619	1570	
v/s Ratio Prot										c0.15	0.18	
v/s Ratio Perm	0.15	0.21						c0.15				
v/c Ratio	0.29	0.41						0.65		0.72	0.39	
Uniform Delay, d1	17.1	18.4						41.7		44.1	21.4	
Progression Factor	1.00	1.00						1.00		1.60	0.68	
Incremental Delay, d2	1.0	0.8						1.5		3.7	0.2	
Delay (s)	18.1	19.2						43.2		74.1	14.7	
Level of Service	B	B						D		E	B	
Approach Delay (s)		18.9			0.0			43.2			39.7	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	287	307	356	227	458	0	0	685	202
Future Volume (vph)	0	0	0	287	307	356	227	458	0	0	685	202
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.98	0.85	1.00	1.00			0.97	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1615	1677	1454	1615	3420			5981	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1615	1677	1454	1615	3420			5981	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	293	313	363	232	467	0	0	699	206
RTOR Reduction (vph)	0	0	0	0	3	154	0	0	0	0	53	0
Lane Group Flow (vph)	0	0	0	293	357	162	232	467	0	0	852	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				59.2	59.2	59.2	21.7	51.8			25.6	
Effective Green, g (s)				61.7	61.7	61.7	24.2	54.3			28.1	
Actuated g/C Ratio				0.51	0.51	0.51	0.20	0.45			0.23	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				830	862	747	325	1547			1400	
v/s Ratio Prot					c0.21		c0.14	0.14			c0.14	
v/s Ratio Perm				0.18		0.11						
v/c Ratio				0.35	0.41	0.22	0.71	0.30			0.61	
Uniform Delay, d1				17.3	18.0	15.9	44.7	20.8			41.0	
Progression Factor				1.00	1.00	1.00	1.51	0.87			0.89	
Incremental Delay, d2				1.2	1.5	0.7	6.7	0.1			0.7	
Delay (s)				18.5	19.5	16.6	74.0	18.3			37.2	
Level of Service				B	B	B	E	B			D	
Approach Delay (s)		0.0			18.2			36.8			37.2	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	560	753	0	0	605	482	253	5	80	0	0	0
Future Volume (vph)	560	753	0	0	605	482	253	5	80	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4914	1530	1534	1552	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4914	1530	1534	1552	1454			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	596	801	0	0	644	513	269	5	85	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	341	0	2	55	0	0	0
Lane Group Flow (vph)	596	801	0	0	644	172	143	138	21	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	49.7	79.8			25.6	25.6	31.2	31.2	31.2			
Effective Green, g (s)	52.2	82.3			28.1	28.1	33.7	33.7	33.7			
Actuated g/C Ratio	0.44	0.69			0.23	0.23	0.28	0.28	0.28			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	702	2345			1150	358	430	435	408			
v/s Ratio Prot	c0.37	0.23			c0.13							
v/s Ratio Perm						0.11	c0.09	0.09	0.01			
v/c Ratio	0.85	0.34			0.56	0.48	0.33	0.32	0.05			
Uniform Delay, d1	30.4	7.7			40.5	39.7	34.2	34.1	31.5			
Progression Factor	1.00	1.00			0.99	2.23	1.00	1.00	1.00			
Incremental Delay, d2	9.4	0.1			0.6	0.9	2.1	1.9	0.2			
Delay (s)	39.8	7.8			40.6	89.2	36.3	36.0	31.7			
Level of Service	D	A			D	F	D	D	C			
Approach Delay (s)		21.5			62.1			35.2			0.0	
Approach LOS		C			E			D			A	

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	67	471	71	2	110	320	612	16	47	223	270	122
Future Volume (vph)	67	471	71	2	110	320	612	16	47	223	270	122
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1600	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0	2.0			2.0	2.0			2.0	2.0	2.0
Lane Util. Factor	1.00	1.00	1.00			0.97	0.95			0.97	1.00	1.00
Frt	1.00	1.00	0.85			1.00	1.00			1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00			0.95	1.00			0.95	1.00	1.00
Satd. Flow (prot)	1615	1800	1530			2949	3407			2949	1800	1530
Flt Permitted	0.95	1.00	1.00			0.95	1.00			0.95	1.00	1.00
Satd. Flow (perm)	1615	1800	1530			2949	3407			2949	1800	1530
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	72	506	76	2	118	344	658	17	51	240	290	131
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	76
Lane Group Flow (vph)	72	506	78	0	0	462	675	0	0	291	290	55
Turn Type	Prot	NA	Prot		Prot	Prot	NA		Prot	Prot	NA	pm+ov
Protected Phases	7	4	4		3	3	8		5	5	2	3
Permitted Phases												2
Actuated Green, G (s)	11.3	35.0	35.0			19.8	43.5			12.8	25.8	45.6
Effective Green, g (s)	13.8	37.5	37.5			22.3	46.0			15.3	28.3	50.6
Actuated g/C Ratio	0.12	0.31	0.31			0.19	0.38			0.13	0.24	0.42
Clearance Time (s)	4.5	4.5	4.5			4.5	4.5			4.5	4.5	4.5
Lane Grp Cap (vph)	185	562	478			548	1306			375	424	670
v/s Ratio Prot	0.04	c0.28	0.05			c0.16	0.20			c0.10	c0.16	0.02
v/s Ratio Perm												0.02
v/c Ratio	0.39	0.90	0.16			0.84	0.52			0.78	0.68	0.08
Uniform Delay, d1	49.2	39.5	29.9			47.2	28.5			50.7	41.8	20.8
Progression Factor	0.90	0.93	0.90			0.51	0.78			1.00	1.00	1.00
Incremental Delay, d2	5.9	19.6	0.7			13.3	1.3			14.5	8.7	0.2
Delay (s)	50.0	56.4	27.5			37.2	23.4			65.2	50.4	21.0
Level of Service	D	E	C			D	C			E	D	C
Approach Delay (s)		52.2					29.0				51.1	
Approach LOS		D					C				D	

Intersection Summary			
HCM 2000 Control Delay	44.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	29	219	54	60	13	123	305	94
Future Volume (vph)	29	219	54	60	13	123	305	94
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1600	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	
Lane Util. Factor	1.00	0.95			1.00	1.00	0.88	
Frt	1.00	0.95			1.00	1.00	0.85	
Flt Protected	0.95	1.00			0.95	0.95	1.00	
Satd. Flow (prot)	1615	3244			1520	1520	2693	
Flt Permitted	0.95	1.00			0.95	0.95	1.00	
Satd. Flow (perm)	1615	3244			1520	1520	2693	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	31	235	58	65	14	132	328	101
RTOR Reduction (vph)	0	16	0	0	0	0	192	0
Lane Group Flow (vph)	31	342	0	0	14	132	237	0
Turn Type	Prot	NA			Prot	Prot	Perm	
Protected Phases	1	6			9	9		
Permitted Phases							9	
Actuated Green, G (s)	5.0	18.0			11.9	11.9	11.9	
Effective Green, g (s)	7.5	20.5			14.4	14.4	14.4	
Actuated g/C Ratio	0.06	0.17			0.12	0.12	0.12	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	100	554			182	182	323	
v/s Ratio Prot	0.02	0.11			0.01	0.09		
v/s Ratio Perm							c0.09	
v/c Ratio	0.31	0.62			0.08	0.73	0.73	
Uniform Delay, d1	53.8	46.1			46.9	50.9	51.0	
Progression Factor	1.00	1.00			0.81	0.78	0.66	
Incremental Delay, d2	7.9	5.1			0.8	21.6	13.5	
Delay (s)	61.7	51.2			38.7	61.4	46.9	
Level of Service	E	D			D	E	D	
Approach Delay (s)		52.1				50.0		
Approach LOS		D				D		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	730	118	78	829	41	152	283	75	38	282	70
Future Volume (vph)	67	730	118	78	829	41	152	283	75	38	282	70
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3349		1615	3396		1615	3312		1615	3318	
Flt Permitted	0.14	1.00		0.15	1.00		0.49	1.00		0.49	1.00	
Satd. Flow (perm)	240	3349		257	3396		833	3312		825	3318	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	793	128	85	901	45	165	308	82	41	307	76
RTOR Reduction (vph)	0	14	0	0	4	0	0	15	0	0	14	0
Lane Group Flow (vph)	73	907	0	85	942	0	165	375	0	41	369	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	45.4	45.4		45.4	45.4		65.6	65.6		65.6	65.6	
Effective Green, g (s)	47.9	47.9		47.9	47.9		68.1	68.1		68.1	68.1	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.57	0.57		0.57	0.57	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	95	1336		102	1355		472	1879		468	1882	
v/s Ratio Prot		0.27			0.28			0.11			0.11	
v/s Ratio Perm	0.30			c0.33			c0.20			0.05		
v/c Ratio	0.77	0.68		0.83	0.70		0.35	0.20		0.09	0.20	
Uniform Delay, d1	31.2	29.7		32.5	30.0		14.0	12.7		11.8	12.6	
Progression Factor	0.74	0.63		1.19	1.17		1.00	1.00		1.00	1.00	
Incremental Delay, d2	20.4	0.9		37.3	1.4		2.0	0.2		0.4	0.2	
Delay (s)	43.5	19.7		76.1	36.4		16.0	12.9		12.2	12.9	
Level of Service	D	B		E	D		B	B		B	B	
Approach Delay (s)		21.4			39.7			13.8			12.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	467	196	175	552	108	175	706	108	123	744	110
Future Volume (vph)	165	467	196	175	552	108	175	706	108	123	744	110
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3420	1530	1615	3420	1530	1615	4816		1615	4819	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1615	3420	1530	1615	3420	1530	1615	4816		1615	4819	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	176	497	209	186	587	115	186	751	115	131	791	117
RTOR Reduction (vph)	0	0	159	0	0	72	0	15	0	0	15	0
Lane Group Flow (vph)	176	497	50	186	587	43	186	851	0	131	893	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	16.6	26.4	26.4	17.0	26.8	26.8	17.3	44.0		14.6	41.3	
Effective Green, g (s)	19.1	28.9	28.9	19.5	29.3	29.3	19.8	46.5		17.1	43.8	
Actuated g/C Ratio	0.16	0.24	0.24	0.16	0.24	0.24	0.17	0.39		0.14	0.36	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	257	823	368	262	835	373	266	1866		230	1758	
v/s Ratio Prot	0.11	0.15		c0.12	c0.17		c0.12	0.18		0.08	c0.19	
v/s Ratio Perm			0.03			0.03						
v/c Ratio	0.68	0.60	0.14	0.71	0.70	0.12	0.70	0.46		0.57	0.51	
Uniform Delay, d1	47.6	40.5	35.8	47.6	41.4	35.3	47.3	27.3		48.0	29.7	
Progression Factor	0.56	0.99	4.43	0.90	1.55	3.54	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.6	1.1	0.2	7.9	2.5	0.1	7.8	0.8		3.2	1.1	
Delay (s)	33.5	41.2	158.4	50.8	66.6	125.0	55.1	28.1		51.2	30.8	
Level of Service	C	D	F	D	E	F	E	C		D	C	
Approach Delay (s)		67.5			70.9			32.9			33.3	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	49.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	121	699	835	36	101	167
Future Volume (vph)	121	699	835	36	101	167
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.93	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.97	1.00
Satd. Flow (prot)	1615	3420	3420	1530	2818	1392
Flt Permitted	0.13	1.00	1.00	1.00	0.97	1.00
Satd. Flow (perm)	227	3420	3420	1530	2818	1392
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	138	794	949	41	115	190
RTOR Reduction (vph)	0	0	0	25	53	56
Lane Group Flow (vph)	138	794	949	16	155	41
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	62.3	62.3	45.3	45.3	48.7	48.7
Effective Green, g (s)	64.8	64.8	47.8	47.8	51.2	51.2
Actuated g/C Ratio	0.54	0.54	0.40	0.40	0.43	0.43
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	296	1846	1362	609	1202	593
v/s Ratio Prot	c0.06	0.23	c0.28		c0.05	
v/s Ratio Perm	0.19			0.01		0.03
v/c Ratio	0.47	0.43	0.70	0.03	0.13	0.07
Uniform Delay, d1	18.3	16.5	30.1	22.0	20.9	20.3
Progression Factor	1.34	1.44	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.2	1.6	0.0	0.2	0.2
Delay (s)	25.6	24.0	31.6	22.0	21.1	20.6
Level of Service	C	C	C	C	C	C
Approach Delay (s)		24.2	31.2		20.9	
Approach LOS		C	C		C	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	8	260	27	25	2	127	1145	17	7	983	208
Future Volume (vph)	305	8	260	27	25	2	127	1145	17	7	983	208
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1534	1632	1530	1615	3420	1530	1615	4903		1615	3420	1530
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1534	1632	1530	1615	3420	1530	1615	4903		1615	3420	1530
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	347	9	295	31	28	2	144	1301	19	8	1117	236
RTOR Reduction (vph)	0	0	141	0	0	2	0	0	0	0	0	61
Lane Group Flow (vph)	177	179	154	31	28	0	144	1320	0	8	1117	175
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	21.8	21.8	38.8	7.0	7.0	7.0	17.0	84.7		1.5	69.2	91.0
Effective Green, g (s)	24.3	24.3	43.8	9.5	9.5	9.5	19.5	87.2		4.0	71.7	96.0
Actuated g/C Ratio	0.18	0.18	0.33	0.07	0.07	0.07	0.15	0.66		0.03	0.54	0.72
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	280	298	503	115	244	109	236	3214		48	1843	1127
v/s Ratio Prot	c0.12	0.11	0.04	c0.02	0.01		c0.09	0.27		0.00	c0.33	0.03
v/s Ratio Perm			0.06			0.00						0.09
v/c Ratio	0.63	0.60	0.31	0.27	0.11	0.00	0.61	0.41		0.17	0.61	0.16
Uniform Delay, d1	50.2	49.9	33.3	58.5	57.8	57.3	53.2	10.8		62.9	21.0	5.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.6	3.4	0.3	1.3	0.2	0.0	4.6	0.4		1.6	1.5	0.1
Delay (s)	54.8	53.3	33.6	59.7	58.0	57.3	57.8	11.2		64.5	22.5	5.9
Level of Service	D	D	C	E	E	E	E	B		E	C	A
Approach Delay (s)		44.8			58.9			15.8			19.8	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	133.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	318	281	0	0	0	0	352	263	183	483	0
Future Volume (veh/h)	160	318	281	0	0	0	0	352	263	183	483	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800				0	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	186	370	327				0	409	306	213	562	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	901	1001	851				0	925	432	329	1404	0
Arrive On Green	0.56	0.56	0.56				0.00	0.28	0.28	0.11	0.41	0.00
Sat Flow, veh/h	1619	1800	1530				0	3438	1530	2956	3510	0
Grp Volume(v), veh/h	186	370	327				0	409	306	213	562	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1530				0	1638	1530	1478	1710	0
Q Serve(g_s), s	6.9	13.8	14.5				0.0	12.3	21.5	8.3	13.9	0.0
Cycle Q Clear(g_c), s	6.9	13.8	14.5				0.0	12.3	21.5	8.3	13.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	901	1001	851				0	925	432	329	1404	0
V/C Ratio(X)	0.21	0.37	0.38				0.00	0.44	0.71	0.65	0.40	0.00
Avail Cap(c_a), veh/h	901	1001	851				0	1160	542	727	2109	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.87	0.87	0.00
Uniform Delay (d), s/veh	13.3	14.9	15.0				0.0	35.3	38.6	51.0	25.0	0.0
Incr Delay (d2), s/veh	0.5	1.0	1.3				0.0	0.3	3.1	1.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	7.1	6.4				0.0	5.6	9.5	3.5	6.6	0.0
LnGrp Delay(d),s/veh	13.9	15.9	16.3				0.0	35.6	41.8	52.9	25.1	0.0
LnGrp LOS	B	B	B					D	D	D	C	
Approach Vol, veh/h		883						715			775	
Approach Delay, s/veh		15.6						38.3			32.8	
Approach LOS		B						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			15.4	35.9		68.8		51.2
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			10.3	23.5		16.5		15.9
Green Ext Time (p_c), s			0.6	7.8		5.2		11.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.0
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.37	2.17	2.63	2.70
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	883	0	715	775
Effct. Green for Bike (s)	72.8	0.0	24.7	43.2
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1213	0	412	720
Bicycle Delay (s/bike)	9.3	0.0	37.8	24.6
Bicycle Compliance	Good		Poor	Fair
Bicycle LOS Score	3.68	0.00	2.40	3.07
Bicycle LOS	D		B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	379	280	503	190	341	0	0	307	23
Future Volume (veh/h)	0	0	0	379	280	503	190	341	0	0	307	23
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1700	1800	1800	1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h				474	559	490	238	426	0	0	384	29
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1002	1114	947	294	1189	0	0	885	65
Arrive On Green				0.62	0.62	0.62	0.18	0.35	0.00	0.00	0.15	0.15
Sat Flow, veh/h				1619	1800	1530	1619	3510	0	0	6180	438
Grp Volume(v), veh/h				474	559	490	238	426	0	0	299	114
Grp Sat Flow(s),veh/h/ln				1619	1800	1530	1619	1710	0	0	1548	1723
Q Serve(g_s), s				18.9	20.6	21.5	16.9	11.1	0.0	0.0	7.0	7.2
Cycle Q Clear(g_c), s				18.9	20.6	21.5	16.9	11.1	0.0	0.0	7.0	7.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.25
Lane Grp Cap(c), veh/h				1002	1114	947	294	1189	0	0	693	257
V/C Ratio(X)				0.47	0.50	0.52	0.81	0.36	0.00	0.00	0.43	0.44
Avail Cap(c_a), veh/h				1002	1114	947	398	2109	0	0	1645	610
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.80	0.80	0.00	0.00	0.50	0.50
Uniform Delay (d), s/veh				12.3	12.6	12.8	47.1	29.2	0.0	0.0	46.4	46.5
Incr Delay (d2), s/veh				1.6	1.6	2.0	7.0	0.1	0.0	0.0	0.2	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.9	10.6	9.5	8.1	5.3	0.0	0.0	3.0	3.5
LnGrp Delay(d),s/veh				13.9	14.3	14.8	54.1	29.3	0.0	0.0	46.6	47.1
LnGrp LOS				B	B	B	D	C			D	D
Approach Vol, veh/h					1523			664			413	
Approach Delay, s/veh					14.3			38.2			46.8	
Approach LOS					B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		76.3		43.7			23.8	19.9
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		39.5		71.5			27.0	40.0
Max Q Clear Time (g_c+I1), s		23.5		13.1			18.9	9.2
Green Ext Time (p_c), s		6.6		6.6			0.4	6.2

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	106.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.16	2.43	2.52	2.61
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	1453	664	413
Effct. Green for Bike (s)	0.0	73.4	42.6	16.1
Cross Street Width (ft)	75.9	106.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	1223	710	268
Bicycle Delay (s/bike)	0.0	9.0	25.0	45.0
Bicycle Compliance		Good	Fair	Poor
Bicycle LOS Score	0.00	5.59	2.71	2.37
Bicycle LOS		F	B	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	467	816	0	0	348	178	204	2	85	0	0	0
Future Volume (veh/h)	467	816	0	0	348	178	204	2	85	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	502	877	0	0	374	191	248	0	61			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	559	1855	0	0	888	277	1374	0	649			
Arrive On Green	0.35	0.54	0.00	0.00	0.18	0.18	0.42	0.00	0.42			
Sat Flow, veh/h	1619	3510	0	0	5076	1530	3238	0	1530			
Grp Volume(v), veh/h	502	877	0	0	374	191	248	0	61			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1638	1530	1619	0	1530			
Q Serve(g_s), s	35.3	18.9	0.0	0.0	8.1	14.0	5.7	0.0	2.9			
Cycle Q Clear(g_c), s	35.3	18.9	0.0	0.0	8.1	14.0	5.7	0.0	2.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	559	1855	0	0	888	277	1374	0	649			
V/C Ratio(X)	0.90	0.47	0.00	0.00	0.42	0.69	0.18	0.00	0.09			
Avail Cap(c_a), veh/h	863	2537	0	0	942	293	1374	0	649			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.95	0.95	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.3	16.9	0.0	0.0	43.6	46.0	21.5	0.0	20.7			
Incr Delay (d2), s/veh	8.3	0.2	0.0	0.0	0.3	6.0	0.3	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	17.0	8.9	0.0	0.0	3.7	6.4	2.6	0.0	1.3			
LnGrp Delay(d),s/veh	45.6	17.1	0.0	0.0	43.9	52.0	21.8	0.0	21.0			
LnGrp LOS	D	B			D	D	C		C			
Approach Vol, veh/h		1379			565			309				
Approach Delay, s/veh		27.5			46.6			21.7				
Approach LOS		C			D			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		52.9		67.1			43.4	23.7
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		24.5		86.5			61.5	20.5
Max Q Clear Time (g_c+I1), s		7.7		20.9			37.3	16.0
Green Ext Time (p_c), s		0.9		13.5			1.6	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.79	2.62	2.06	2.08
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1379	565	312	0
Effct. Green for Bike (s)	68.0	18.1	48.0	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1133	302	800	0
Bicycle Delay (s/bike)	11.3	43.3	21.6	0.0
Bicycle Compliance	Fair	Poor	Fair	
Bicycle LOS Score	3.27	2.27	3.18	0.00
Bicycle LOS	C	B	C	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	125.4	73.1	103.0	63.0	96.6
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	7	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.81	2.79	2.58	2.30	2.85
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	784	834	281	268	525
Effct. Green for Bike (s)	48.8	52.3	20.5	20.5	16.0
Cross Street Width (ft)	96.6	63.0	73.1	125.4	103.0
Through Lanes Number	1	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	813	872	342	342	267
Bicycle Delay (s/bike)	21.1	19.1	41.3	41.3	45.1
Bicycle Compliance	Fair	Fair	Poor	Poor	Poor
Bicycle LOS Score	4.33	3.21	3.14	3.70	4.00
Bicycle LOS	E	C	C	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	805	181	68	558	29	71	161	53	40	180	41
Future Volume (veh/h)	63	805	181	68	558	29	71	161	53	40	180	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	72	925	208	78	641	33	82	185	61	46	207	47
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	408	1599	359	209	1906	98	428	997	319	432	1087	242
Arrive On Green	0.39	0.39	0.39	0.58	0.58	0.58	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	733	2776	624	477	3310	170	1080	2550	816	1088	2782	619
Grp Volume(v), veh/h	72	569	564	78	331	343	82	122	124	46	126	128
Grp Sat Flow(s),veh/h/ln	733	1710	1690	477	1710	1770	1080	1710	1656	1088	1710	1691
Q Serve(g_s), s	8.6	31.6	31.7	16.2	12.2	12.2	6.5	5.6	5.9	3.5	5.8	6.0
Cycle Q Clear(g_c), s	20.8	31.6	31.7	47.8	12.2	12.2	12.5	5.6	5.9	9.4	5.8	6.0
Prop In Lane	1.00		0.37	1.00		0.10	1.00		0.49	1.00		0.37
Lane Grp Cap(c), veh/h	408	985	973	209	985	1019	428	668	647	432	668	661
V/C Ratio(X)	0.18	0.58	0.58	0.37	0.34	0.34	0.19	0.18	0.19	0.11	0.19	0.19
Avail Cap(c_a), veh/h	480	1154	1141	256	1154	1195	428	668	647	432	668	661
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.50	0.50	0.50	0.84	0.84	0.84	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	25.3	25.4	34.0	13.4	13.4	28.2	24.0	24.1	27.2	24.0	24.1
Incr Delay (d2), s/veh	0.1	0.3	0.3	0.9	0.2	0.2	1.0	0.6	0.7	0.5	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	15.0	14.9	2.2	5.7	6.0	2.1	2.8	2.8	1.1	2.8	2.9
LnGrp Delay(d),s/veh	26.6	25.6	25.6	34.9	13.6	13.6	29.2	24.6	24.7	27.7	24.7	24.8
LnGrp LOS	C	C	C	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1205			752			328			300	
Approach Delay, s/veh		25.7			15.8			25.8			25.2	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		48.9		71.1		48.9		71.1
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		32.5		78.5		32.5		78.5
Max Q Clear Time (g_c+I1), s		14.5		33.7		11.4		49.8
Green Ext Time (p_c), s		3.3		21.1		3.4		16.8

Intersection Summary	
HCM 2010 Ctrl Delay	22.7
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.71	2.67	2.48	2.44
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1205	752	328	300
Effct. Green for Bike (s)	58.5	58.5	57.5	57.5
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	975	975	958	958
Bicycle Delay (s/bike)	15.8	15.8	16.3	16.3
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	3.47	3.10	2.93	2.91
Bicycle LOS	C	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	553	176	153	377	83	149	525	121	112	600	117
Future Volume (veh/h)	110	553	176	153	377	83	149	525	121	112	600	117
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	129	651	207	180	444	98	175	618	142	132	706	138
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	876	392	229	968	433	231	1683	380	188	1627	314
Arrive On Green	0.11	0.26	0.26	0.28	0.57	0.57	0.14	0.42	0.42	0.12	0.39	0.39
Sat Flow, veh/h	1619	3420	1530	1619	3420	1530	1619	4010	906	1619	4135	799
Grp Volume(v), veh/h	129	651	207	180	444	98	175	503	257	132	558	286
Grp Sat Flow(s),veh/h/ln	1619	1710	1530	1619	1710	1530	1619	1638	1640	1619	1638	1659
Q Serve(g_s), s	9.2	21.0	14.0	12.3	9.1	3.8	12.5	12.6	12.9	9.4	14.9	15.2
Cycle Q Clear(g_c), s	9.2	21.0	14.0	12.3	9.1	3.8	12.5	12.6	12.9	9.4	14.9	15.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.55	1.00		0.48
Lane Grp Cap(c), veh/h	185	876	392	229	968	433	231	1375	688	188	1289	652
V/C Ratio(X)	0.70	0.74	0.53	0.79	0.46	0.23	0.76	0.37	0.37	0.70	0.43	0.44
Avail Cap(c_a), veh/h	290	983	440	290	983	440	290	1375	688	290	1289	652
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	0.75	0.75	0.75	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	41.0	38.4	41.4	20.6	19.5	49.5	23.9	24.0	51.0	26.6	26.7
Incr Delay (d2), s/veh	3.3	1.9	0.8	8.1	0.3	0.2	8.6	0.8	1.6	4.7	1.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	10.2	6.0	6.0	4.2	1.6	6.1	5.9	6.2	4.5	6.9	7.3
LnGrp Delay(d),s/veh	54.4	42.9	39.2	49.5	20.9	19.7	58.0	24.6	25.5	55.7	27.7	28.8
LnGrp LOS	D	D	D	D	C	B	E	C	C	E	C	C
Approach Vol, veh/h		987			722			935			976	
Approach Delay, s/veh		43.6			27.8			31.1			31.8	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	52.4	19.0	32.7	19.1	49.2	15.7	36.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.6	32.0	19.0	32.0	19.0	32.0	19.0	32.0
Max Q Clear Time (g_c+I1), s	11.4	14.9	14.3	23.0	14.5	17.2	11.2	11.1
Green Ext Time (p_c), s	0.2	9.8	0.2	5.3	0.2	8.9	0.2	8.8

Intersection Summary	
HCM 2010 Ctrl Delay	34.1
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.76	2.74	2.90	2.87
Pedestrian Crosswalk LOS	C	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	987	722	935	976
Effct. Green for Bike (s)	31.3	33.6	44.2	42.3
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	522	560	737	705
Bicycle Delay (s/bike)	32.8	31.1	23.9	25.2
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.67	3.45	3.18	3.20
Bicycle LOS	D	C	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	218	742	591	100	63	156
Future Volume (veh/h)	218	742	591	100	63	156
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1600	1800
Adj Flow Rate, veh/h	256	873	695	118	74	184
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	389	1666	1135	508	731	1467
Arrive On Green	0.14	0.49	0.33	0.33	0.48	0.48
Sat Flow, veh/h	1619	3510	3510	1530	1524	3060
Grp Volume(v), veh/h	256	873	695	118	74	184
Grp Sat Flow(s),veh/h/ln	1619	1710	1710	1530	1524	1530
Q Serve(g_s), s	11.6	21.1	20.5	6.7	3.2	4.0
Cycle Q Clear(g_c), s	11.6	21.1	20.5	6.7	3.2	4.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	389	1666	1135	508	731	1467
V/C Ratio(X)	0.66	0.52	0.61	0.23	0.10	0.13
Avail Cap(c_a), veh/h	569	2565	1653	739	731	1467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.65	0.65	0.90	0.90	1.00	1.00
Uniform Delay (d), s/veh	22.2	21.2	33.6	29.0	17.1	17.3
Incr Delay (d2), s/veh	1.2	0.2	0.5	0.2	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	10.0	9.7	2.8	1.4	4.7
LnGrp Delay(d),s/veh	23.5	21.3	34.1	29.2	17.4	17.5
LnGrp LOS	C	C	C	C	B	B
Approach Vol, veh/h		1129	813		258	
Approach Delay, s/veh		21.8	33.4		17.4	
Approach LOS		C	C		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				60.5		59.5	18.7	41.8
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				87.5		23.5	27.5	55.5
Max Q Clear Time (g_c+I1), s				23.1		6.0	13.6	22.5
Green Ext Time (p_c), s				18.1		0.8	0.6	14.9

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.71	2.58	2.44
Pedestrian Crosswalk LOS	B	B	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	1129	813	258
Effct. Green for Bike (s)	60.8	35.6	55.2
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	1013	593	920
Bicycle Delay (s/bike)	14.6	29.7	17.5
Bicycle Compliance	Fair	Fair	Fair
Bicycle LOS Score	3.41	3.17	2.69
Bicycle LOS	C	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	78	201	21	18	2	239	743	112	15	968	268
Future Volume (veh/h)	144	78	201	21	18	2	239	743	112	15	968	268
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	126	141	228	24	20	2	272	844	127	17	1100	305
Adj No. of Lanes	1	1	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	266	296	499	80	169	76	262	2977	446	59	1930	1115
Arrive On Green	0.16	0.16	0.16	0.05	0.05	0.05	0.16	0.69	0.69	0.04	0.56	0.56
Sat Flow, veh/h	1619	1800	1530	1619	3420	1530	1619	4316	646	1619	3420	1530
Grp Volume(v), veh/h	126	141	228	24	20	2	272	640	331	17	1100	305
Grp Sat Flow(s),veh/h/ln	1619	1800	1530	1619	1710	1530	1619	1638	1686	1619	1710	1530
Q Serve(g_s), s	9.4	9.4	15.7	1.9	0.7	0.2	21.5	10.0	10.1	1.4	27.5	9.0
Cycle Q Clear(g_c), s	9.4	9.4	15.7	1.9	0.7	0.2	21.5	10.0	10.1	1.4	27.5	9.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	266	296	499	80	169	76	262	2259	1163	59	1930	1115
V/C Ratio(X)	0.47	0.48	0.46	0.30	0.12	0.03	1.04	0.28	0.29	0.29	0.57	0.27
Avail Cap(c_a), veh/h	420	467	644	420	887	397	262	2259	1163	262	1930	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	50.4	35.5	61.0	60.4	60.2	55.8	8.0	8.0	62.4	18.6	6.1
Incr Delay (d2), s/veh	1.2	1.1	0.6	2.1	0.3	0.1	66.2	0.3	0.6	2.7	1.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	4.8	6.7	0.9	0.4	0.1	14.4	4.6	4.9	0.7	13.3	6.3
LnGrp Delay(d),s/veh	51.5	51.5	36.1	63.0	60.7	60.3	122.0	8.3	8.6	65.1	19.8	6.7
LnGrp LOS	D	D	D	E	E	E	F	A	A	E	B	A
Approach Vol, veh/h		495			46			1243			1422	
Approach Delay, s/veh		44.4			61.9			33.2			17.6	
Approach LOS		D			E			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	93.7		23.9	23.5	77.1		8.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	19.0	32.0		32.0	19.0	32.0		32.0
Max Q Clear Time (g_c+I1), s	3.4	12.1		17.7	23.5	29.5		3.9
Green Ext Time (p_c), s	0.0	14.9		1.7	0.0	2.3		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	28.4
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	66.5	66.5	66.5	66.5
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.54	2.38	2.90	2.96
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	481	46	1243	1422
Effct. Green for Bike (s)	19.7	10.0	96.2	64.6
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	296	150	1447	971
Bicycle Delay (s/bike)	48.3	56.9	5.1	17.6
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	3.47	2.90	3.16	3.67
Bicycle LOS	C	C	C	D

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	10	0	260	20	1	192
Future Vol, veh/h	10	0	260	20	1	192
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	0	274	21	1	202

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	387	147	0	0	295	0
Stage 1	284	-	-	-	-	-
Stage 2	103	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	594	880	-	-	1278	-
Stage 1	745	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	593	880	-	-	1278	-
Mov Cap-2 Maneuver	636	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	915	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	636	1278	-
HCM Lane V/C Ratio	-	-	0.017	0.001	-
HCM Control Delay (s)	-	-	10.8	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	59.6
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	452
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.91
Prob of Blocked Lane	0.45
Delay for adq Gap	65.61
Avg Ped Delay (s)	59.57

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	59.6
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	452
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.91
Prob of Blocked Lane	0.45
Delay for adq Gap	65.61
Avg Ped Delay (s)	59.57

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	5	0	280	10	0	202
Future Vol, veh/h	5	0	280	10	0	202
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	0	295	11	0	213

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	406	153	0	0	305	0
Stage 1	300	-	-	-	-	-
Stage 2	106	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	578	872	-	-	1267	-
Stage 1	731	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	578	872	-	-	1267	-
Mov Cap-2 Maneuver	623	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	913	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	623	1267	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s)	-	-	10.8	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	72
Level of Service	F

Crosswalk	
Length (ft)	57
Lanes Crossed	4
Veh Vol Crossed	482
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.29
Prob of Delayed X-ing	0.92
Prob of Blocked Lane	0.48
Delay for adq Gap	77.92
Avg Ped Delay (s)	72.02

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	68.6
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	482
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.92
Prob of Blocked Lane	0.47
Delay for adq Gap	74.45
Avg Ped Delay (s)	68.60

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	14	0	290	29	0	206
Future Vol, veh/h	14	0	290	29	0	206
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	15	0	305	31	0	217

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	429	168	0	0	336	0
Stage 1	321	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	559	853	-	-	1235	-
Stage 1	714	-	-	-	-	-
Stage 2	910	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	559	853	-	-	1235	-
Mov Cap-2 Maneuver	608	-	-	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	910	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	608	1235	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	-	-	11.1	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	129.9
Level of Service	F

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	496
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	0.95
Prob of Blocked Lane	0.54
Delay for adq Gap	136.04
Avg Ped Delay (s)	129.85

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	213.2
Level of Service	F

Crosswalk	
Length (ft)	79
Lanes Crossed	4
Veh Vol Crossed	496
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	25.57
Prob of Delayed X-ing	0.97
Prob of Blocked Lane	0.59
Delay for adq Gap	219.64
Avg Ped Delay (s)	213.16

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	318	281	0	0	0	0	352	263	183	483	0
Future Volume (vph)	160	318	281	0	0	0	0	352	263	183	483	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0						2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91						0.91		0.97	0.95	
Frt	1.00	0.93						0.94		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1470	3048						4599		2949	3420	
Flt Permitted	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (perm)	1470	3048						4599		2949	3420	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	186	370	327	0	0	0	0	409	306	213	562	0
RTOR Reduction (vph)	0	77	0	0	0	0	0	139	0	0	0	0
Lane Group Flow (vph)	167	639	0	0	0	0	0	576	0	213	562	0
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6											
Actuated Green, G (s)	70.3	70.3						22.2		14.0	40.7	
Effective Green, g (s)	72.8	72.8						24.7		16.5	43.2	
Actuated g/C Ratio	0.61	0.61						0.21		0.14	0.36	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	891	1849						946		405	1231	
v/s Ratio Prot								c0.13		c0.07	0.16	
v/s Ratio Perm	0.11	0.21										
v/c Ratio	0.19	0.35						0.61		0.53	0.46	
Uniform Delay, d1	10.5	11.7						43.3		48.1	29.4	
Progression Factor	1.00	1.00						1.00		1.30	0.93	
Incremental Delay, d2	0.5	0.5						1.1		1.2	0.3	
Delay (s)	10.9	12.3						44.4		63.8	27.7	
Level of Service	B	B						D		E	C	
Approach Delay (s)		12.0			0.0			44.4			37.6	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	379	280	503	190	341	0	0	307	23
Future Volume (vph)	0	0	0	379	280	503	190	341	0	0	307	23
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.95	0.85	1.00	1.00			0.99	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1615	1628	1454	1615	3420			6127	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1615	1628	1454	1615	3420			6127	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	0	0	0	474	350	629	238	426	0	0	384	29
RTOR Reduction (vph)	0	0	0	0	9	174	0	0	0	0	13	0
Lane Group Flow (vph)	0	0	0	474	505	291	238	426	0	0	400	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				70.8	70.8	70.8	22.1	40.2			13.6	
Effective Green, g (s)				73.3	73.3	73.3	24.6	42.7			16.1	
Actuated g/C Ratio				0.61	0.61	0.61	0.21	0.36			0.13	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				986	994	888	331	1216			822	
v/s Ratio Prot					c0.31		c0.15	0.12			c0.07	
v/s Ratio Perm				0.29		0.20						
v/c Ratio				0.48	0.51	0.33	0.72	0.35			0.49	
Uniform Delay, d1				12.9	13.2	11.4	44.5	28.4			48.1	
Progression Factor				1.00	1.00	1.00	1.58	0.80			0.57	
Incremental Delay, d2				1.7	1.9	1.0	7.1	0.2			0.4	
Delay (s)				14.5	15.0	12.3	77.2	22.9			28.0	
Level of Service				B	B	B	E	C			C	
Approach Delay (s)		0.0			14.0			42.4			28.0	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: I-215 NB Off Ramp/I-215 NB On Ramp & W Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	467	816	0	0	348	178	204	2	85	0	0	0
Future Volume (vph)	467	816	0	0	348	178	204	2	85	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4914	1530	1534	1549	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4914	1530	1534	1549	1454			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	502	877	0	0	374	191	219	2	91	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	162	0	2	49	0	0	0
Lane Group Flow (vph)	502	877	0	0	374	29	116	112	33	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	45.4	65.5			15.6	15.6	45.5	45.5	45.5			
Effective Green, g (s)	47.9	68.0			18.1	18.1	48.0	48.0	48.0			
Actuated g/C Ratio	0.40	0.57			0.15	0.15	0.40	0.40	0.40			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	644	1938			741	230	613	619	581			
v/s Ratio Prot	c0.31	c0.26			0.08							
v/s Ratio Perm						0.02	c0.08	0.07	0.02			
v/c Ratio	0.78	0.45			0.50	0.13	0.19	0.18	0.06			
Uniform Delay, d1	31.4	15.2			46.8	44.1	23.4	23.3	22.1			
Progression Factor	1.00	1.00			0.84	3.20	1.00	1.00	1.00			
Incremental Delay, d2	5.9	0.2			0.5	0.2	0.7	0.6	0.2			
Delay (s)	37.4	15.3			39.8	141.5	24.1	23.9	22.3			
Level of Service	D	B			D	F	C	C	C			
Approach Delay (s)		23.4			74.2			23.5			0.0	
Approach LOS		C			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	36.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: Inland Center Drive & S E Street & W Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	63	581	61	63	240	433	14	12	52	119	70	39
Future Volume (vph)	63	581	61	63	240	433	14	12	52	119	70	39
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800	1800	1800	1600	1800	1800	1700
Total Lost time (s)	2.0	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	1.00	1.00		0.97	0.95			0.97	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	1615	1800	1530		2949	3403			2949	1800	1530	1615
Flt Permitted	0.95	1.00	1.00		0.95	1.00			0.95	1.00	1.00	0.95
Satd. Flow (perm)	1615	1800	1530		2949	3403			2949	1800	1530	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	70	646	68	70	267	481	16	13	58	132	78	43
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	54	0
Lane Group Flow (vph)	70	646	68	0	337	497	0	0	71	132	24	43
Turn Type	Prot	NA	Prot	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot
Protected Phases	7	4	4	3	3	8		5	5	2	3	1
Permitted Phases											2	
Actuated Green, G (s)	8.7	47.5	47.5		14.5	53.3			5.0	18.0	32.5	5.0
Effective Green, g (s)	11.2	50.0	50.0		17.0	55.8			7.5	20.5	37.5	7.5
Actuated g/C Ratio	0.09	0.42	0.42		0.14	0.46			0.06	0.17	0.31	0.06
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5			4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	150	750	637		417	1582			184	307	503	100
v/s Ratio Prot	0.04	c0.36	0.04		c0.11	0.15			0.02	c0.07	0.01	c0.03
v/s Ratio Perm											0.01	
v/c Ratio	0.47	0.86	0.11		0.81	0.31			0.39	0.43	0.05	0.43
Uniform Delay, d1	51.6	31.8	21.4		49.9	20.1			54.0	44.5	28.8	54.2
Progression Factor	0.80	1.18	1.00		0.77	1.59			1.00	1.00	1.00	1.00
Incremental Delay, d2	9.7	12.0	0.3		15.2	0.5			6.0	4.3	0.2	12.9
Delay (s)	51.0	49.6	21.7		53.6	32.5			60.1	48.9	29.0	67.1
Level of Service	D	D	C		D	C			E	D	C	E
Approach Delay (s)		47.3				41.1				46.2		
Approach LOS		D				D				D		

Intersection Summary			
HCM 2000 Control Delay	47.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations							
Traffic Volume (vph)	139	29	35	4	110	312	47
Future Volume (vph)	139	29	35	4	110	312	47
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1800	1800
Total Lost time (s)	2.0			2.0	2.0	2.0	
Lane Util. Factor	0.95			1.00	1.00	0.88	
Frt	0.95			1.00	1.00	0.85	
Flt Protected	1.00			0.95	0.95	1.00	
Satd. Flow (prot)	3258			1520	1520	2693	
Flt Permitted	1.00			0.95	0.95	1.00	
Satd. Flow (perm)	3258			1520	1520	2693	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	154	32	39	4	122	347	52
RTOR Reduction (vph)	15	0	0	0	0	155	0
Lane Group Flow (vph)	210	0	0	4	122	244	0
Turn Type	NA			Prot	Prot	Perm	
Protected Phases	6			9	9		
Permitted Phases						9	
Actuated Green, G (s)	18.0			12.5	12.5	12.5	
Effective Green, g (s)	20.5			15.0	15.0	15.0	
Actuated g/C Ratio	0.17			0.12	0.12	0.12	
Clearance Time (s)	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	556			190	190	336	
v/s Ratio Prot	0.06			0.00	0.08		
v/s Ratio Perm						c0.09	
v/c Ratio	0.38			0.02	0.64	0.73	
Uniform Delay, d1	44.1			46.1	49.9	50.5	
Progression Factor	1.00			0.95	0.92	0.87	
Incremental Delay, d2	2.0			0.2	14.8	12.3	
Delay (s)	46.0			43.9	60.7	56.5	
Level of Service	D			D	E	E	
Approach Delay (s)	49.4				57.3		
Approach LOS	D				E		

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: S Arrowhead Avenue & W Mill Street/E Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	805	181	68	558	29	71	161	53	40	180	41
Future Volume (vph)	63	805	181	68	558	29	71	161	53	40	180	41
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3326		1615	3395		1615	3293		1615	3325	
Flt Permitted	0.31	1.00		0.13	1.00		0.56	1.00		0.57	1.00	
Satd. Flow (perm)	522	3326		219	3395		958	3293		968	3325	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	72	925	208	78	641	33	82	185	61	46	207	47
RTOR Reduction (vph)	0	25	0	0	5	0	0	20	0	0	12	0
Lane Group Flow (vph)	72	1108	0	78	669	0	82	226	0	46	242	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	56.0	56.0		56.0	56.0		55.0	55.0		55.0	55.0	
Effective Green, g (s)	58.5	58.5		58.5	58.5		57.5	57.5		57.5	57.5	
Actuated g/C Ratio	0.49	0.49		0.49	0.49		0.48	0.48		0.48	0.48	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	254	1621		106	1655		459	1577		463	1593	
v/s Ratio Prot		0.33			0.20			0.07			0.07	
v/s Ratio Perm	0.14			c0.36			c0.09			0.05		
v/c Ratio	0.28	0.68		0.74	0.40		0.18	0.14		0.10	0.15	
Uniform Delay, d1	18.3	23.6		24.6	19.6		17.8	17.5		17.1	17.6	
Progression Factor	0.36	0.41		1.02	0.87		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.8		20.8	0.1		0.9	0.2		0.4	0.2	
Delay (s)	7.0	10.5		45.8	17.2		18.7	17.7		17.5	17.8	
Level of Service	A	B		D	B		B	B		B	B	
Approach Delay (s)		10.3			20.2			17.9			17.7	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	553	176	153	377	83	149	525	121	112	600	117
Future Volume (vph)	110	553	176	153	377	83	149	525	121	112	600	117
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3420	1530	1615	3420	1530	1615	4776		1615	4793	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1615	3420	1530	1615	3420	1530	1615	4776		1615	4793	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	129	651	207	180	444	98	175	618	142	132	706	138
RTOR Reduction (vph)	0	0	153	0	0	68	0	28	0	0	22	0
Lane Group Flow (vph)	129	651	54	180	444	30	175	732	0	132	822	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	14.5	28.8	28.8	16.8	31.1	31.1	16.6	41.7		14.7	39.8	
Effective Green, g (s)	17.0	31.3	31.3	19.3	33.6	33.6	19.1	44.2		17.2	42.3	
Actuated g/C Ratio	0.14	0.26	0.26	0.16	0.28	0.28	0.16	0.37		0.14	0.35	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	228	892	399	259	957	428	257	1759		231	1689	
v/s Ratio Prot	0.08	c0.19		c0.11	0.13		c0.11	0.15		0.08	c0.17	
v/s Ratio Perm			0.04			0.02						
v/c Ratio	0.57	0.73	0.14	0.69	0.46	0.07	0.68	0.42		0.57	0.49	
Uniform Delay, d1	48.1	40.5	34.0	47.6	35.7	31.7	47.6	28.3		48.0	30.4	
Progression Factor	0.67	1.24	4.61	0.82	1.51	4.23	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.9	2.7	0.1	7.5	0.3	0.1	7.2	0.7		3.4	1.0	
Delay (s)	35.0	53.1	156.8	46.4	54.5	134.3	54.8	29.0		51.4	31.4	
Level of Service	C	D	F	D	D	F	D	C		D	C	
Approach Delay (s)		72.4			63.3			33.8			34.1	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	50.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	218	742	591	100	63	156
Future Volume (vph)	218	742	591	100	63	156
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.92	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.98	1.00
Satd. Flow (prot)	1615	3420	3420	1530	2784	1392
Flt Permitted	0.17	1.00	1.00	1.00	0.98	1.00
Satd. Flow (perm)	282	3420	3420	1530	2784	1392
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	256	873	695	118	74	184
RTOR Reduction (vph)	0	0	0	83	50	50
Lane Group Flow (vph)	256	873	695	35	116	42
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	58.3	58.3	33.1	33.1	52.7	52.7
Effective Green, g (s)	60.8	60.8	35.6	35.6	55.2	55.2
Actuated g/C Ratio	0.51	0.51	0.30	0.30	0.46	0.46
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	400	1732	1014	453	1280	640
v/s Ratio Prot	c0.12	0.26	c0.20		c0.04	
v/s Ratio Perm	0.20			0.02		0.03
v/c Ratio	0.64	0.50	0.69	0.08	0.09	0.07
Uniform Delay, d1	20.5	19.6	37.3	30.4	18.3	18.0
Progression Factor	1.09	1.31	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	0.2	1.9	0.1	0.1	0.2
Delay (s)	25.4	25.9	39.2	30.5	18.4	18.2
Level of Service	C	C	D	C	B	B
Approach Delay (s)		25.8	37.9		18.3	
Approach LOS		C	D		B	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	78	201	21	18	2	239	743	112	15	968	268
Future Volume (vph)	144	78	201	21	18	2	239	743	112	15	968	268
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1534	1684	1530	1615	3420	1530	1615	4818		1615	3420	1530
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1534	1684	1530	1615	3420	1530	1615	4818		1615	3420	1530
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	164	89	228	24	20	2	272	844	127	17	1100	305
RTOR Reduction (vph)	0	0	134	0	0	2	0	6	0	0	0	110
Lane Group Flow (vph)	125	128	94	24	20	0	272	965	0	17	1100	195
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	17.2	17.2	49.5	5.2	5.2	5.2	32.3	89.2		3.4	60.3	77.5
Effective Green, g (s)	19.7	19.7	54.5	7.7	7.7	7.7	34.8	91.7		5.9	62.8	82.5
Actuated g/C Ratio	0.15	0.15	0.41	0.06	0.06	0.06	0.26	0.69		0.04	0.47	0.62
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	227	249	626	93	198	88	422	3321		71	1614	972
v/s Ratio Prot	c0.08	0.08	0.04	c0.01	0.01		c0.17	0.20		0.01	c0.32	0.03
v/s Ratio Perm			0.02			0.00						0.10
v/c Ratio	0.55	0.51	0.15	0.26	0.10	0.00	0.64	0.29		0.24	0.68	0.20
Uniform Delay, d1	52.5	52.2	24.7	59.9	59.4	59.0	43.6	8.0		61.4	27.3	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.9	1.8	0.1	1.5	0.2	0.0	3.4	0.2		1.7	2.3	0.1
Delay (s)	55.4	54.0	24.8	61.4	59.6	59.0	47.0	8.2		63.1	29.7	11.1
Level of Service	E	D	C	E	E	E	D	A		E	C	B
Approach Delay (s)		40.5			60.5			16.7			26.1	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	133.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	348	305	0	0	0	1	458	250	437	566	0
Future Volume (veh/h)	227	348	305	0	0	0	1	458	250	437	566	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800				1800	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	244	374	328				1	492	269	470	609	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	765	851	723				30	920	389	584	1689	0
Arrive On Green	0.47	0.47	0.47				0.28	0.28	0.28	0.20	0.49	0.00
Sat Flow, veh/h	1619	1800	1530				1	3288	1392	2956	3510	0
Grp Volume(v), veh/h	244	374	328				270	223	269	470	609	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1530				1798	1491	1392	1478	1710	0
Q Serve(g_s), s	11.2	16.6	17.3				0.0	15.2	20.7	18.2	13.2	0.0
Cycle Q Clear(g_c), s	11.2	16.6	17.3				15.2	15.2	20.7	18.2	13.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	765	851	723				533	417	389	584	1689	0
V/C Ratio(X)	0.32	0.44	0.45				0.51	0.54	0.69	0.80	0.36	0.00
Avail Cap(c_a), veh/h	765	851	723				667	528	493	727	2109	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	1.00	0.81	0.81	0.00
Uniform Delay (d), s/veh	19.6	21.1	21.2				36.6	36.6	38.6	45.9	18.7	0.0
Incr Delay (d2), s/veh	1.1	1.6	2.0				0.7	1.1	2.9	4.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	8.6	7.7				7.7	6.4	8.2	7.8	6.2	0.0
LnGrp Delay(d),s/veh	20.7	22.7	23.3				37.4	37.7	41.5	50.3	18.8	0.0
LnGrp LOS	C	C	C				D	D	D	D	B	
Approach Vol, veh/h		946						762			1079	
Approach Delay, s/veh		22.4						38.9			32.5	
Approach LOS		C						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			25.7	35.6		58.7		61.3
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			20.2	22.7		19.3		15.2
Green Ext Time (p_c), s			1.0	8.4		5.2		12.4

Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.38	2.28	2.65	2.77
Pedestrian Crosswalk LOS	B	B	B	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	946	0	762	1079
Effct. Green for Bike (s)	60.1	0.0	27.9	55.9
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1002	0	465	932
Bicycle Delay (s/bike)	15.0	0.0	35.3	17.1
Bicycle Compliance	Fair		Poor	Fair
Bicycle LOS Score	3.73	0.00	2.43	3.32
Bicycle LOS	D		B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	287	307	367	227	458	0	0	710	202
Future Volume (veh/h)	0	0	0	287	307	367	227	458	0	0	710	202
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1700	1800	1800	1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h				293	359	344	232	467	0	0	724	206
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				835	928	789	289	1543	0	0	1248	343
Arrive On Green				0.52	0.52	0.52	0.18	0.45	0.00	0.00	0.26	0.26
Sat Flow, veh/h				1619	1800	1530	1619	3510	0	0	5122	1338
Grp Volume(v), veh/h				293	359	344	232	467	0	0	689	241
Grp Sat Flow(s),veh/h/ln				1619	1800	1530	1619	1710	0	0	1548	1564
Q Serve(g_s), s				12.8	14.5	16.9	16.5	10.4	0.0	0.0	15.6	16.2
Cycle Q Clear(g_c), s				12.8	14.5	16.9	16.5	10.4	0.0	0.0	15.6	16.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.86
Lane Grp Cap(c), veh/h				835	928	789	289	1543	0	0	1190	401
V/C Ratio(X)				0.35	0.39	0.44	0.80	0.30	0.00	0.00	0.58	0.60
Avail Cap(c_a), veh/h				835	928	789	398	2109	0	0	1645	554
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.77	0.77	0.00	0.00	0.38	0.38
Uniform Delay (d), s/veh				17.2	17.6	18.2	47.3	20.9	0.0	0.0	39.0	39.2
Incr Delay (d2), s/veh				1.2	1.2	1.8	6.4	0.1	0.0	0.0	0.2	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.0	7.5	7.5	7.9	4.9	0.0	0.0	6.7	7.1
LnGrp Delay(d),s/veh				18.4	18.8	19.9	53.6	21.0	0.0	0.0	39.2	39.8
LnGrp LOS				B	B	B	D	C			D	D
Approach Vol, veh/h					996			699			930	
Approach Delay, s/veh					19.1			31.8			39.3	
Approach LOS					B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		63.9		56.1			23.4	32.7
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		39.5		71.5			27.0	40.0
Max Q Clear Time (g_c+I1), s		18.9		12.4			18.5	18.2
Green Ext Time (p_c), s		4.3		13.6			0.4	10.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.6
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	106.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.21	2.28	2.57	2.67
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	980	699	930
Effct. Green for Bike (s)	0.0	60.9	55.1	28.8
Cross Street Width (ft)	75.9	106.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	1015	918	480
Bicycle Delay (s/bike)	0.0	14.6	17.6	34.7
Bicycle Compliance		Fair	Fair	Poor
Bicycle LOS Score	0.00	4.81	2.73	2.59
Bicycle LOS		E	B	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	560	761	0	0	605	500	253	5	80	0	0	0
Future Volume (veh/h)	560	761	0	0	605	500	253	5	80	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	596	810	0	0	644	532	297	0	58			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	649	2339	0	0	1310	408	915	0	432			
Arrive On Green	0.40	0.68	0.00	0.00	0.27	0.27	0.28	0.00	0.28			
Sat Flow, veh/h	1619	3510	0	0	5076	1530	3238	0	1530			
Grp Volume(v), veh/h	596	810	0	0	644	532	297	0	58			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1638	1530	1619	0	1530			
Q Serve(g_s), s	41.9	11.8	0.0	0.0	13.3	32.0	8.7	0.0	3.4			
Cycle Q Clear(g_c), s	41.9	11.8	0.0	0.0	13.3	32.0	8.7	0.0	3.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	649	2339	0	0	1310	408	915	0	432			
V/C Ratio(X)	0.92	0.35	0.00	0.00	0.49	1.30	0.32	0.00	0.13			
Avail Cap(c_a), veh/h	796	2651	0	0	1310	408	915	0	432			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.77	0.77	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.1	7.8	0.0	0.0	37.1	44.0	34.0	0.0	32.1			
Incr Delay (d2), s/veh	13.8	0.1	0.0	0.0	0.2	150.1	0.9	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	21.2	5.5	0.0	0.0	6.0	30.5	4.0	0.0	1.5			
LnGrp Delay(d),s/veh	47.9	7.9	0.0	0.0	37.4	194.1	34.9	0.0	32.7			
LnGrp LOS	D	A			D	F	C		C			
Approach Vol, veh/h		1406			1176			355				
Approach Delay, s/veh		24.9			108.3			34.6				
Approach LOS		C			F			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		35.9		84.1			50.1	34.0
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		20.5		90.5			56.5	29.5
Max Q Clear Time (g_c+I1), s		10.7		13.8			43.9	34.0
Green Ext Time (p_c), s		0.9		21.2			1.7	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.4
HCM 2010 LOS	E

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.85	2.73	2.08	2.29
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1406	1176	359	0
Effct. Green for Bike (s)	82.6	28.4	33.4	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1377	473	557	0
Bicycle Delay (s/bike)	5.8	35.0	31.2	0.0
Bicycle Compliance	Good	Poor	Poor	
Bicycle LOS Score	3.30	2.60	3.26	0.00
Bicycle LOS	C	B	C	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	125.4	73.1	103.0	63.0	96.6
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	7	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.85	2.83	2.68	2.37	2.88
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	665	1168	712	389	587
Effct. Green for Bike (s)	37.5	46.0	28.3	20.5	14.4
Cross Street Width (ft)	96.6	63.0	73.1	125.4	103.0
Through Lanes Number	1	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	625	767	472	342	240
Bicycle Delay (s/bike)	28.4	22.8	35.0	41.3	46.5
Bicycle Compliance	Fair	Fair	Poor	Poor	Poor
Bicycle LOS Score	4.13	3.49	3.85	3.80	4.10
Bicycle LOS	D	C	D	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	748	118	78	872	41	152	283	75	38	282	70
Future Volume (veh/h)	67	748	118	78	872	41	152	283	75	38	282	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	73	813	128	85	948	45	165	308	82	41	307	76
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	228	1499	236	206	1683	80	435	1235	324	431	1256	306
Arrive On Green	0.17	0.17	0.17	0.51	0.51	0.51	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	544	2961	466	571	3324	158	960	2683	703	953	2728	665
Grp Volume(v), veh/h	73	469	472	85	488	505	165	195	195	41	191	192
Grp Sat Flow(s),veh/h/ln	544	1710	1718	571	1710	1772	960	1710	1676	953	1710	1683
Q Serve(g_s), s	15.1	30.2	30.2	15.6	23.6	23.6	15.2	8.3	8.5	3.3	8.1	8.4
Cycle Q Clear(g_c), s	38.8	30.2	30.2	45.8	23.6	23.6	23.5	8.3	8.5	11.8	8.1	8.4
Prop In Lane	1.00		0.27	1.00		0.09	1.00		0.42	1.00		0.40
Lane Grp Cap(c), veh/h	228	866	869	206	866	897	435	787	772	431	787	775
V/C Ratio(X)	0.32	0.54	0.54	0.41	0.56	0.56	0.38	0.25	0.25	0.10	0.24	0.25
Avail Cap(c_a), veh/h	243	912	916	221	912	945	435	787	772	431	787	775
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.52	0.52	0.62	0.62	0.62	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	37.2	37.2	39.2	20.5	20.5	26.9	19.7	19.8	23.4	19.7	19.7
Incr Delay (d2), s/veh	0.4	0.3	0.3	0.8	0.5	0.4	2.5	0.7	0.8	0.4	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	14.4	14.5	2.5	11.2	11.6	4.3	4.1	4.1	0.9	4.0	4.1
LnGrp Delay(d),s/veh	52.3	37.6	37.6	40.0	20.9	20.9	29.4	20.5	20.6	23.8	20.4	20.5
LnGrp LOS	D	D	D	D	C	C	C	C	C	C	C	C
Approach Vol, veh/h		1014			1078			555			424	
Approach Delay, s/veh		38.6			22.4			23.1			20.8	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		57.3		62.7		57.3		62.7
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		49.5		61.5		49.5		61.5
Max Q Clear Time (g_c+I1), s		25.5		40.8		13.8		47.8
Green Ext Time (p_c), s		6.1		14.4		6.6		10.4

Intersection Summary	
HCM 2010 Ctrl Delay	27.7
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.75	2.71	2.53	2.49
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1014	1078	555	424
Effct. Green for Bike (s)	49.7	49.7	66.3	66.3
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	828	828	1105	1105
Bicycle Delay (s/bike)	20.6	20.6	12.0	12.0
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	3.31	3.37	3.12	3.01
Bicycle LOS	C	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	485	196	179	595	110	175	706	110	124	744	110
Future Volume (veh/h)	165	485	196	179	595	110	175	706	110	124	744	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	176	516	209	190	633	117	186	751	117	132	791	117
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	232	837	374	243	860	385	241	1815	280	188	1687	248
Arrive On Green	0.14	0.24	0.24	0.20	0.33	0.33	0.15	0.42	0.42	0.12	0.39	0.39
Sat Flow, veh/h	1619	3420	1530	1619	3420	1530	1619	4295	664	1619	4328	636
Grp Volume(v), veh/h	176	516	209	190	633	117	186	571	297	132	597	311
Grp Sat Flow(s),veh/h/ln	1619	1710	1530	1619	1710	1530	1619	1638	1683	1619	1638	1688
Q Serve(g_s), s	12.5	16.1	14.3	13.4	19.6	6.8	13.3	14.6	14.8	9.4	16.3	16.5
Cycle Q Clear(g_c), s	12.5	16.1	14.3	13.4	19.6	6.8	13.3	14.6	14.8	9.4	16.3	16.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		0.38
Lane Grp Cap(c), veh/h	232	837	374	243	860	385	241	1384	711	188	1277	658
V/C Ratio(X)	0.76	0.62	0.56	0.78	0.74	0.30	0.77	0.41	0.42	0.70	0.47	0.47
Avail Cap(c_a), veh/h	290	983	440	290	983	440	290	1384	711	290	1277	658
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.72	0.73	0.73	0.73	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	40.3	39.7	46.2	36.4	32.2	49.1	24.2	24.3	51.0	27.3	27.4
Incr Delay (d2), s/veh	6.4	0.6	0.9	8.2	1.8	0.3	10.0	0.9	1.8	4.7	1.2	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	7.7	6.2	6.5	9.5	2.9	6.6	6.8	7.2	4.5	7.6	8.1
LnGrp Delay(d),s/veh	55.8	40.9	40.6	54.4	38.3	32.5	59.1	25.1	26.1	55.7	28.6	29.8
LnGrp LOS	E	D	D	D	D	C	E	C	C	E	C	C
Approach Vol, veh/h		901			940			1054			1040	
Approach Delay, s/veh		43.8			40.8			31.4			32.4	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	52.7	20.0	31.4	19.9	48.8	19.2	32.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	32.0	19.0	32.0	19.0	32.0	19.0	32.0
Max Q Clear Time (g_c+I1), s	11.4	16.8	15.4	18.1	15.3	18.5	14.5	21.6
Green Ext Time (p_c), s	0.2	9.9	0.2	7.4	0.2	9.0	0.2	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	36.7
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.77	2.75	2.93	2.91
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	901	940	1054	1040
Effct. Green for Bike (s)	30.3	30.8	44.9	42.5
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	505	513	748	708
Bicycle Delay (s/bike)	33.5	33.2	23.5	25.0
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.60	3.63	3.24	3.24
Bicycle LOS	D	D	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	142	699	835	42	116	216
Future Volume (veh/h)	142	699	835	42	116	216
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1600	1800
Adj Flow Rate, veh/h	161	794	949	48	126	252
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	311	1786	1416	634	677	1360
Arrive On Green	0.09	0.52	0.41	0.41	0.44	0.44
Sat Flow, veh/h	1619	3510	3510	1530	1524	3060
Grp Volume(v), veh/h	161	794	949	48	126	252
Grp Sat Flow(s),veh/h/ln	1619	1710	1710	1530	1524	1530
Q Serve(g_s), s	6.3	17.3	27.0	2.3	6.0	6.0
Cycle Q Clear(g_c), s	6.3	17.3	27.0	2.3	6.0	6.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	311	1786	1416	634	677	1360
V/C Ratio(X)	0.52	0.44	0.67	0.08	0.19	0.19
Avail Cap(c_a), veh/h	392	2594	2052	918	677	1360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.95	0.95	1.00	1.00
Uniform Delay (d), s/veh	20.2	17.8	28.5	21.3	20.2	20.2
Incr Delay (d2), s/veh	1.0	0.1	0.5	0.0	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	8.2	12.9	1.0	2.6	6.6
LnGrp Delay(d),s/veh	21.2	18.0	29.0	21.3	20.8	20.5
LnGrp LOS	C	B	C	C	C	C
Approach Vol, veh/h		955	997		378	
Approach Delay, s/veh		18.5	28.7		20.6	
Approach LOS		B	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				64.7		55.3	13.0	51.7
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				88.5		22.5	14.5	69.5
Max Q Clear Time (g_c+I1), s				19.3		8.0	8.3	29.0
Green Ext Time (p_c), s				21.4		1.1	0.2	18.2

Intersection Summary	
HCM 2010 Ctrl Delay	23.2
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.74	2.62	2.44
Pedestrian Crosswalk LOS	B	B	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	955	997	377
Effct. Green for Bike (s)	65.5	47.8	50.5
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	1092	797	842
Bicycle Delay (s/bike)	12.4	21.7	20.1
Bicycle Compliance	Fair	Fair	Fair
Bicycle LOS Score	3.27	3.32	2.79
Bicycle LOS	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	8	274	27	25	2	133	1145	17	7	983	209
Future Volume (veh/h)	306	8	274	27	25	2	133	1145	17	7	983	209
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	354	0	311	31	28	2	151	1301	19	8	1117	238
Adj No. of Lanes	2	0	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	694	0	518	85	179	80	202	3217	47	46	1876	1167
Arrive On Green	0.21	0.00	0.21	0.05	0.05	0.05	0.12	0.64	0.64	0.03	0.55	0.55
Sat Flow, veh/h	3238	0	1530	1619	3420	1530	1619	4990	73	1619	3420	1530
Grp Volume(v), veh/h	354	0	311	31	28	2	151	854	466	8	1117	238
Grp Sat Flow(s),veh/h/ln	1619	0	1530	1619	1710	1530	1619	1638	1787	1619	1710	1530
Q Serve(g_s), s	12.8	0.0	22.4	2.5	1.0	0.2	12.0	16.7	16.7	0.6	29.1	5.8
Cycle Q Clear(g_c), s	12.8	0.0	22.4	2.5	1.0	0.2	12.0	16.7	16.7	0.6	29.1	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	694	0	518	85	179	80	202	2112	1152	46	1876	1167
V/C Ratio(X)	0.51	0.00	0.60	0.37	0.16	0.02	0.75	0.40	0.40	0.17	0.60	0.20
Avail Cap(c_a), veh/h	840	0	588	420	887	397	262	2112	1152	262	1876	1167
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	0.0	36.5	60.9	60.2	59.8	56.2	11.4	11.4	63.1	20.1	4.4
Incr Delay (d2), s/veh	0.5	0.0	1.3	2.6	0.4	0.1	8.3	0.6	1.1	1.8	1.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	9.7	1.2	0.5	0.1	5.8	7.6	8.5	0.3	14.0	4.8
LnGrp Delay(d),s/veh	46.6	0.0	37.8	63.5	60.6	59.9	64.5	11.9	12.4	64.9	21.5	4.8
LnGrp LOS	D		D	E	E	E	E	B	B	E	C	A
Approach Vol, veh/h		665			61			1471			1363	
Approach Delay, s/veh		42.5			62.0			17.5			18.9	
Approach LOS		D			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	87.8		30.5	18.6	75.0		9.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	19.0	32.0		32.0	19.0	32.0		32.0
Max Q Clear Time (g_c+I1), s	2.6	18.7		24.4	14.0	31.1		4.5
Green Ext Time (p_c), s	0.0	11.5		1.6	0.2	0.8		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	23.4
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	66.5	66.5	66.5	66.5
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.54	2.34	2.95	3.04
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	668	61	1471	1363
Effct. Green for Bike (s)	24.3	10.6	91.7	72.1
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	365	159	1379	1084
Bicycle Delay (s/bike)	44.4	56.3	6.4	13.9
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	3.78	2.91	3.29	3.62
Bicycle LOS	D	C	C	D

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	22	1	157	10	0	268
Future Vol, veh/h	22	1	157	10	0	268
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	23	1	165	11	0	282

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	312	88	0	0	176	0
Stage 1	171	-	-	-	-	-
Stage 2	141	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	661	959	-	-	1412	-
Stage 1	848	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	661	959	-	-	1412	-
Mov Cap-2 Maneuver	695	-	-	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	877	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	703	1412	-
HCM Lane V/C Ratio	-	-	0.034	-	-
HCM Control Delay (s)	-	-	10.3	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	52.3
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	425
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.89
Prob of Blocked Lane	0.43
Delay for adq Gap	58.55
Avg Ped Delay (s)	52.34

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	52.3
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	425
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.89
Prob of Blocked Lane	0.43
Delay for adq Gap	58.55
Avg Ped Delay (s)	52.34

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	11	0	167	5	0	290
Future Vol, veh/h	11	0	167	5	0	290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	12	0	176	5	0	305

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	331	91	0	0	181	0
Stage 1	178	-	-	-	-	-
Stage 2	153	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	644	955	-	-	1407	-
Stage 1	841	-	-	-	-	-
Stage 2	865	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	644	955	-	-	1407	-
Mov Cap-2 Maneuver	683	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	865	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	683	1407	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	-	-	10.4	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	64
Level of Service	F

Crosswalk	
Length (ft)	57
Lanes Crossed	4
Veh Vol Crossed	457
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.29
Prob of Delayed X-ing	0.91
Prob of Blocked Lane	0.46
Delay for adq Gap	70.01
Avg Ped Delay (s)	63.96

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	61
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	457
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.91
Prob of Blocked Lane	0.45
Delay for adq Gap	67.01
Avg Ped Delay (s)	61.00

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	32	0	172	14	0	301
Future Vol, veh/h	32	0	172	14	0	301
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	34	0	181	15	0	317

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	346	98	0	0	196	0
Stage 1	188	-	-	-	-	-
Stage 2	158	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	630	945	-	-	1389	-
Stage 1	831	-	-	-	-	-
Stage 2	860	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	630	945	-	-	1389	-
Mov Cap-2 Maneuver	673	-	-	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	860	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	673	1389	-
HCM Lane V/C Ratio	-	-	0.05	-	-
HCM Control Delay (s)	-	-	10.6	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	114.9
Level of Service	F

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	473
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	0.95
Prob of Blocked Lane	0.52
Delay for adq Gap	121.29
Avg Ped Delay (s)	114.92

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	185.9
Level of Service	F

Crosswalk	
Length (ft)	79
Lanes Crossed	4
Veh Vol Crossed	473
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	25.57
Prob of Delayed X-ing	0.97
Prob of Blocked Lane	0.57
Delay for adq Gap	192.58
Avg Ped Delay (s)	185.89

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	348	305	0	0	0	1	458	250	437	566	0
Future Volume (vph)	227	348	305	0	0	0	1	458	250	437	566	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0						2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91						0.91		0.97	0.95	
Frt	1.00	0.93						0.95		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1470	3049						4653		2949	3420	
Flt Permitted	0.95	1.00						0.94		0.95	1.00	
Satd. Flow (perm)	1470	3049						4372		2949	3420	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	244	374	328	0	0	0	1	492	269	470	609	0
RTOR Reduction (vph)	0	96	0	0	0	0	0	98	0	0	0	0
Lane Group Flow (vph)	220	630	0	0	0	0	0	664	0	470	609	0
Turn Type	Perm	NA					Perm	NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6						4					
Actuated Green, G (s)	57.5	57.5						25.4		23.6	53.5	
Effective Green, g (s)	60.0	60.0						27.9		26.1	56.0	
Actuated g/C Ratio	0.50	0.50						0.23		0.22	0.47	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	735	1524						1016		641	1596	
v/s Ratio Prot										c0.16	0.18	
v/s Ratio Perm	0.15	0.21						c0.15				
v/c Ratio	0.30	0.41						0.65		0.73	0.38	
Uniform Delay, d1	17.6	18.9						41.7		43.7	20.8	
Progression Factor	1.00	1.00						1.00		1.62	0.67	
Incremental Delay, d2	1.0	0.8						1.5		4.1	0.1	
Delay (s)	18.7	19.7						43.2		74.8	14.1	
Level of Service	B	B						D		E	B	
Approach Delay (s)		19.5			0.0			43.2			40.5	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	287	307	367	227	458	0	0	710	202
Future Volume (vph)	0	0	0	287	307	367	227	458	0	0	710	202
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.98	0.85	1.00	1.00			0.97	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1615	1673	1454	1615	3420			5986	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1615	1673	1454	1615	3420			5986	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	293	313	374	232	467	0	0	724	206
RTOR Reduction (vph)	0	0	0	0	4	159	0	0	0	0	50	0
Lane Group Flow (vph)	0	0	0	293	361	163	232	467	0	0	880	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				58.4	58.4	58.4	21.7	52.6			26.4	
Effective Green, g (s)				60.9	60.9	60.9	24.2	55.1			28.9	
Actuated g/C Ratio				0.51	0.51	0.51	0.20	0.46			0.24	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				819	849	737	325	1570			1441	
v/s Ratio Prot					c0.22		c0.14	0.14			c0.15	
v/s Ratio Perm				0.18		0.11						
v/c Ratio				0.36	0.43	0.22	0.71	0.30			0.61	
Uniform Delay, d1				17.8	18.6	16.4	44.7	20.3			40.5	
Progression Factor				1.00	1.00	1.00	1.49	0.89			0.89	
Incremental Delay, d2				1.2	1.6	0.7	6.7	0.1			0.7	
Delay (s)				19.0	20.1	17.1	73.5	18.1			36.9	
Level of Service				B	C	B	E	B			D	
Approach Delay (s)		0.0			18.8			36.5			36.9	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	560	761	0	0	605	500	253	5	80	0	0	0
Future Volume (vph)	560	761	0	0	605	500	253	5	80	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4914	1530	1534	1552	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4914	1530	1534	1552	1454			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	596	810	0	0	644	532	269	5	85	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	340	0	2	55	0	0	0
Lane Group Flow (vph)	596	810	0	0	644	192	143	138	21	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	49.7	80.1			25.9	25.9	30.9	30.9	30.9			
Effective Green, g (s)	52.2	82.6			28.4	28.4	33.4	33.4	33.4			
Actuated g/C Ratio	0.44	0.69			0.24	0.24	0.28	0.28	0.28			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	702	2354			1162	362	426	431	404			
v/s Ratio Prot	c0.37	0.24			c0.13							
v/s Ratio Perm						0.13	c0.09	0.09	0.01			
v/c Ratio	0.85	0.34			0.55	0.53	0.34	0.32	0.05			
Uniform Delay, d1	30.4	7.6			40.2	40.0	34.5	34.3	31.7			
Progression Factor	1.00	1.00			0.97	2.03	1.00	1.00	1.00			
Incremental Delay, d2	9.4	0.1			0.5	1.3	2.1	2.0	0.2			
Delay (s)	39.8	7.7			39.7	82.5	36.6	36.3	32.0			
Level of Service	D	A			D	F	D	D	C			
Approach Delay (s)		21.3			59.0			35.5			0.0	
Approach LOS		C			E			D			A	

Intersection Summary			
HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	67	479	71	2	110	331	630	16	47	223	270	122
Future Volume (vph)	67	479	71	2	110	331	630	16	47	223	270	122
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1600	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0	2.0			2.0	2.0			2.0	2.0	2.0
Lane Util. Factor	1.00	1.00	1.00			0.97	0.95			0.97	1.00	1.00
Frt	1.00	1.00	0.85			1.00	1.00			1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00			0.95	1.00			0.95	1.00	1.00
Satd. Flow (prot)	1615	1800	1530			2949	3407			2949	1800	1530
Flt Permitted	0.95	1.00	1.00			0.95	1.00			0.95	1.00	1.00
Satd. Flow (perm)	1615	1800	1530			2949	3407			2949	1800	1530
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	72	515	76	2	118	356	677	17	51	240	290	131
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	76
Lane Group Flow (vph)	72	515	78	0	0	474	694	0	0	291	290	55
Turn Type	Prot	NA	Prot		Prot	Prot	NA		Prot	Prot	NA	pm+ov
Protected Phases	7	4	4		3	3	8		5	5	2	3
Permitted Phases												2
Actuated Green, G (s)	11.3	35.0	35.0			19.8	43.5			12.8	25.8	45.6
Effective Green, g (s)	13.8	37.5	37.5			22.3	46.0			15.3	28.3	50.6
Actuated g/C Ratio	0.12	0.31	0.31			0.19	0.38			0.13	0.24	0.42
Clearance Time (s)	4.5	4.5	4.5			4.5	4.5			4.5	4.5	4.5
Lane Grp Cap (vph)	185	562	478			548	1306			375	424	670
v/s Ratio Prot	0.04	c0.29	0.05			c0.16	0.20			c0.10	c0.16	0.02
v/s Ratio Perm												0.02
v/c Ratio	0.39	0.92	0.16			0.86	0.53			0.78	0.68	0.08
Uniform Delay, d1	49.2	39.7	29.9			47.4	28.7			50.7	41.8	20.8
Progression Factor	0.90	0.93	0.90			0.53	0.76			1.00	1.00	1.00
Incremental Delay, d2	5.9	21.6	0.7			14.9	1.4			14.5	8.7	0.2
Delay (s)	50.1	58.8	27.6			39.9	23.3			65.2	50.4	21.0
Level of Service	D	E	C			D	C			E	D	C
Approach Delay (s)		54.2					30.0				51.1	
Approach LOS		D					C				D	

Intersection Summary			
HCM 2000 Control Delay	44.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	29	219	54	60	13	123	316	94
Future Volume (vph)	29	219	54	60	13	123	316	94
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1600	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	
Lane Util. Factor	1.00	0.95			1.00	1.00	0.88	
Frt	1.00	0.95			1.00	1.00	0.85	
Flt Protected	0.95	1.00			0.95	0.95	1.00	
Satd. Flow (prot)	1615	3244			1520	1520	2693	
Flt Permitted	0.95	1.00			0.95	0.95	1.00	
Satd. Flow (perm)	1615	3244			1520	1520	2693	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	31	235	58	65	14	132	340	101
RTOR Reduction (vph)	0	16	0	0	0	0	192	0
Lane Group Flow (vph)	31	342	0	0	14	132	249	0
Turn Type	Prot	NA			Prot	Prot	Perm	
Protected Phases	1	6			9	9		
Permitted Phases							9	
Actuated Green, G (s)	5.0	18.0			11.9	11.9	11.9	
Effective Green, g (s)	7.5	20.5			14.4	14.4	14.4	
Actuated g/C Ratio	0.06	0.17			0.12	0.12	0.12	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	100	554			182	182	323	
v/s Ratio Prot	0.02	0.11			0.01	0.09		
v/s Ratio Perm							c0.09	
v/c Ratio	0.31	0.62			0.08	0.73	0.77	
Uniform Delay, d1	53.8	46.1			46.9	50.9	51.2	
Progression Factor	1.00	1.00			0.81	0.79	0.65	
Incremental Delay, d2	7.9	5.1			0.8	21.6	15.8	
Delay (s)	61.7	51.2			39.0	61.7	49.2	
Level of Service	E	D			D	E	D	
Approach Delay (s)		52.1				51.8		
Approach LOS		D				D		

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: S Arrowhead Avenue & W Mill Street/E Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	748	118	78	872	41	152	283	75	38	282	70
Future Volume (vph)	67	748	118	78	872	41	152	283	75	38	282	70
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3350		1615	3397		1615	3312		1615	3318	
Flt Permitted	0.13	1.00		0.15	1.00		0.49	1.00		0.48	1.00	
Satd. Flow (perm)	226	3350		260	3397		828	3312		821	3318	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	813	128	85	948	45	165	308	82	41	307	76
RTOR Reduction (vph)	0	13	0	0	4	0	0	16	0	0	14	0
Lane Group Flow (vph)	73	928	0	85	989	0	165	374	0	41	369	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	47.2	47.2		47.2	47.2		63.8	63.8		63.8	63.8	
Effective Green, g (s)	49.7	49.7		49.7	49.7		66.3	66.3		66.3	66.3	
Actuated g/C Ratio	0.41	0.41		0.41	0.41		0.55	0.55		0.55	0.55	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	93	1387		107	1406		457	1829		453	1833	
v/s Ratio Prot		0.28			0.29			0.11			0.11	
v/s Ratio Perm	0.32			c0.33			c0.20			0.05		
v/c Ratio	0.78	0.67		0.79	0.70		0.36	0.20		0.09	0.20	
Uniform Delay, d1	30.5	28.5		30.7	29.1		15.0	13.5		12.6	13.5	
Progression Factor	0.76	0.65		1.23	1.21		1.00	1.00		1.00	1.00	
Incremental Delay, d2	22.4	0.7		28.1	1.4		2.2	0.3		0.4	0.2	
Delay (s)	45.6	19.3		66.0	36.7		17.2	13.8		13.0	13.8	
Level of Service	D	B		E	D		B	B		B	B	
Approach Delay (s)		21.2			39.0			14.8			13.7	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	485	196	179	595	110	175	706	110	124	744	110
Future Volume (vph)	165	485	196	179	595	110	175	706	110	124	744	110
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3420	1530	1615	3420	1530	1615	4815		1615	4819	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1615	3420	1530	1615	3420	1530	1615	4815		1615	4819	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	176	516	209	190	633	117	186	751	117	132	791	117
RTOR Reduction (vph)	0	0	156	0	0	71	0	16	0	0	15	0
Lane Group Flow (vph)	176	516	53	190	633	46	186	852	0	132	893	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	16.6	27.8	27.8	17.1	28.3	28.3	17.0	42.4		14.7	40.1	
Effective Green, g (s)	19.1	30.3	30.3	19.6	30.8	30.8	19.5	44.9		17.2	42.6	
Actuated g/C Ratio	0.16	0.25	0.25	0.16	0.26	0.26	0.16	0.37		0.14	0.36	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	257	863	386	263	877	392	262	1801		231	1710	
v/s Ratio Prot	0.11	0.15		c0.12	c0.19		c0.12	0.18		0.08	c0.19	
v/s Ratio Perm			0.03			0.03						
v/c Ratio	0.68	0.60	0.14	0.72	0.72	0.12	0.71	0.47		0.57	0.52	
Uniform Delay, d1	47.6	39.5	34.7	47.6	40.7	34.2	47.6	28.6		48.0	30.6	
Progression Factor	0.56	1.01	4.42	0.89	1.54	3.38	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.6	1.0	0.1	8.8	2.8	0.1	8.5	0.9		3.4	1.1	
Delay (s)	33.5	40.8	153.7	51.2	65.5	115.7	56.1	29.5		51.4	31.8	
Level of Service	C	D	F	D	E	F	E	C		D	C	
Approach Delay (s)		65.6			68.9			34.2			34.3	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	49.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	142	699	835	42	116	216
Future Volume (vph)	142	699	835	42	116	216
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.93	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.97	1.00
Satd. Flow (prot)	1615	3420	3420	1530	2807	1392
Flt Permitted	0.13	1.00	1.00	1.00	0.97	1.00
Satd. Flow (perm)	227	3420	3420	1530	2807	1392
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	161	794	949	48	132	245
RTOR Reduction (vph)	0	0	0	29	71	71
Lane Group Flow (vph)	161	794	949	19	184	51
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	63.0	63.0	45.3	45.3	48.0	48.0
Effective Green, g (s)	65.5	65.5	47.8	47.8	50.5	50.5
Actuated g/C Ratio	0.55	0.55	0.40	0.40	0.42	0.42
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	305	1866	1362	609	1181	585
v/s Ratio Prot	c0.07	0.23	c0.28		c0.07	
v/s Ratio Perm	0.22			0.01		0.04
v/c Ratio	0.53	0.43	0.70	0.03	0.16	0.09
Uniform Delay, d1	18.4	16.1	30.1	22.0	21.5	20.9
Progression Factor	1.25	1.45	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	1.6	0.0	0.3	0.3
Delay (s)	24.5	23.5	31.6	22.0	21.8	21.2
Level of Service	C	C	C	C	C	C
Approach Delay (s)		23.7	31.2		21.6	
Approach LOS		C	C		C	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	306	8	274	27	25	2	133	1145	17	7	983	209
Future Volume (vph)	306	8	274	27	25	2	133	1145	17	7	983	209
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1534	1632	1530	1615	3420	1530	1615	4903		1615	3420	1530
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1534	1632	1530	1615	3420	1530	1615	4903		1615	3420	1530
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	348	9	311	31	28	2	151	1301	19	8	1117	238
RTOR Reduction (vph)	0	0	147	0	0	2	0	0	0	0	0	63
Lane Group Flow (vph)	177	180	164	31	28	0	151	1320	0	8	1117	175
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	21.8	21.8	39.4	7.0	7.0	7.0	17.6	84.7		1.5	68.6	90.4
Effective Green, g (s)	24.3	24.3	44.4	9.5	9.5	9.5	20.1	87.2		4.0	71.1	95.4
Actuated g/C Ratio	0.18	0.18	0.33	0.07	0.07	0.07	0.15	0.66		0.03	0.53	0.72
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	280	298	510	115	244	109	244	3214		48	1828	1120
v/s Ratio Prot	c0.12	0.11	0.05	c0.02	0.01		c0.09	0.27		0.00	c0.33	0.03
v/s Ratio Perm			0.06			0.00						0.09
v/c Ratio	0.63	0.60	0.32	0.27	0.11	0.00	0.62	0.41		0.17	0.61	0.16
Uniform Delay, d1	50.2	49.9	33.1	58.5	57.8	57.3	52.9	10.8		62.9	21.4	6.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.6	3.4	0.4	1.3	0.2	0.0	4.6	0.4		1.6	1.5	0.1
Delay (s)	54.8	53.4	33.4	59.7	58.0	57.3	57.5	11.2		64.5	22.9	6.1
Level of Service	D	D	C	E	E	E	E	B		E	C	A
Approach Delay (s)		44.5			58.9			15.9			20.2	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	133.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	318	282	0	0	24	0	353	264	183	485	0
Future Volume (veh/h)	160	318	282	0	0	24	0	353	264	183	485	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800				0	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	186	370	328				0	410	307	213	564	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	900	1000	850				0	927	433	329	1406	0
Arrive On Green	0.56	0.56	0.56				0.00	0.28	0.28	0.11	0.41	0.00
Sat Flow, veh/h	1619	1800	1530				0	3438	1530	2956	3510	0
Grp Volume(v), veh/h	186	370	328				0	410	307	213	564	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1530				0	1638	1530	1478	1710	0
Q Serve(g_s), s	6.9	13.8	14.6				0.0	12.3	21.6	8.3	14.0	0.0
Cycle Q Clear(g_c), s	6.9	13.8	14.6				0.0	12.3	21.6	8.3	14.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	900	1000	850				0	927	433	329	1406	0
V/C Ratio(X)	0.21	0.37	0.39				0.00	0.44	0.71	0.65	0.40	0.00
Avail Cap(c_a), veh/h	900	1000	850				0	1160	542	727	2109	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.87	0.87	0.00
Uniform Delay (d), s/veh	13.4	14.9	15.1				0.0	35.3	38.6	51.0	24.9	0.0
Incr Delay (d2), s/veh	0.5	1.1	1.3				0.0	0.3	3.2	1.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	7.1	6.4				0.0	5.6	9.5	3.5	6.6	0.0
LnGrp Delay(d),s/veh	13.9	16.0	16.4				0.0	35.6	41.8	52.9	25.1	0.0
LnGrp LOS	B	B	B					D	D	D	C	
Approach Vol, veh/h		884						717			777	
Approach Delay, s/veh		15.7						38.2			32.7	
Approach LOS		B						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			15.4	36.0		68.7		51.3
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			10.3	23.6		16.6		16.0
Green Ext Time (p_c), s			0.6	7.9		5.2		11.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.1
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.37	2.18	2.64	2.70
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	884	28	717	777
Effct. Green for Bike (s)	72.8	0.0	24.7	43.2
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1213	0	412	720
Bicycle Delay (s/bike)	9.3	0.0	37.8	24.6
Bicycle Compliance	Good		Poor	Fair
Bicycle LOS Score	3.68	0.00	2.40	3.07
Bicycle LOS	D		B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	379	280	481	192	365	0	0	307	23
Future Volume (veh/h)	0	0	0	379	280	481	192	365	0	0	307	23
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1700	1800	1800	1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h				474	538	476	240	456	0	0	384	29
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				997	1108	942	296	1201	0	0	897	66
Arrive On Green				0.62	0.62	0.62	0.18	0.35	0.00	0.00	0.15	0.15
Sat Flow, veh/h				1619	1800	1530	1619	3510	0	0	6180	438
Grp Volume(v), veh/h				474	538	476	240	456	0	0	299	114
Grp Sat Flow(s),veh/h/ln				1619	1800	1530	1619	1710	0	0	1548	1723
Q Serve(g_s), s				19.1	19.7	20.8	17.1	12.0	0.0	0.0	7.0	7.2
Cycle Q Clear(g_c), s				19.1	19.7	20.8	17.1	12.0	0.0	0.0	7.0	7.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.25
Lane Grp Cap(c), veh/h				997	1108	942	296	1201	0	0	703	261
V/C Ratio(X)				0.48	0.49	0.51	0.81	0.38	0.00	0.00	0.43	0.44
Avail Cap(c_a), veh/h				997	1108	942	398	2109	0	0	1645	610
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.80	0.80	0.00	0.00	0.52	0.52
Uniform Delay (d), s/veh				12.5	12.6	12.9	47.0	29.2	0.0	0.0	46.2	46.3
Incr Delay (d2), s/veh				1.6	1.5	1.9	7.2	0.2	0.0	0.0	0.2	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.9	10.2	9.2	8.2	5.7	0.0	0.0	3.0	3.5
LnGrp Delay(d),s/veh				14.2	14.2	14.8	54.2	29.3	0.0	0.0	46.4	46.9
LnGrp LOS				B	B	B	D	C			D	D
Approach Vol, veh/h					1488			696			413	
Approach Delay, s/veh					14.4			37.9			46.5	
Approach LOS					B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		75.9		44.1			24.0	20.2
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		39.5		71.5			27.0	40.0
Max Q Clear Time (g_c+I1), s		22.8		14.0			19.1	9.2
Green Ext Time (p_c), s		6.5		6.9			0.4	6.4

Intersection Summary	
HCM 2010 Ctrl Delay	25.8
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	106.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.16	2.42	2.53	2.61
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	1425	696	413
Effct. Green for Bike (s)	0.0	73.2	42.8	16.1
Cross Street Width (ft)	75.9	106.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	1220	713	268
Bicycle Delay (s/bike)	0.0	9.1	24.8	45.0
Bicycle Compliance		Good	Fair	Poor
Bicycle LOS Score	0.00	5.54	2.73	2.37
Bicycle LOS		F	B	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	467	873	0	0	386	197	204	2	85	0	0	0
Future Volume (veh/h)	467	873	0	0	386	197	204	2	85	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	502	939	0	0	415	212	248	0	61			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	559	1894	0	0	944	294	1337	0	632			
Arrive On Green	0.35	0.55	0.00	0.00	0.19	0.19	0.41	0.00	0.41			
Sat Flow, veh/h	1619	3510	0	0	5076	1530	3238	0	1530			
Grp Volume(v), veh/h	502	939	0	0	415	212	248	0	61			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1638	1530	1619	0	1530			
Q Serve(g_s), s	35.3	20.3	0.0	0.0	8.9	15.6	5.8	0.0	2.9			
Cycle Q Clear(g_c), s	35.3	20.3	0.0	0.0	8.9	15.6	5.8	0.0	2.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	559	1894	0	0	944	294	1337	0	632			
V/C Ratio(X)	0.90	0.50	0.00	0.00	0.44	0.72	0.19	0.00	0.10			
Avail Cap(c_a), veh/h	863	2565	0	0	983	306	1337	0	632			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.93	0.93	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.3	16.5	0.0	0.0	42.8	45.5	22.4	0.0	21.5			
Incr Delay (d2), s/veh	8.3	0.2	0.0	0.0	0.3	7.2	0.3	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	17.0	9.6	0.0	0.0	4.1	7.2	2.7	0.0	1.3			
LnGrp Delay(d),s/veh	45.6	16.7	0.0	0.0	43.1	52.7	22.7	0.0	21.8			
LnGrp LOS	D	B			D	D	C		C			
Approach Vol, veh/h		1441			627			309				
Approach Delay, s/veh		26.8			46.3			22.5				
Approach LOS		C			D			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		51.6		68.4			43.4	25.0
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		23.5		87.5			61.5	21.5
Max Q Clear Time (g_c+I1), s		7.8		22.3			37.3	17.6
Green Ext Time (p_c), s		0.9		15.4			1.6	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	31.4
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.81	2.64	2.06	2.09
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1441	627	312	0
Effct. Green for Bike (s)	69.0	19.1	47.0	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1150	318	783	0
Bicycle Delay (s/bike)	10.8	42.4	22.2	0.0
Bicycle Compliance	Fair	Poor	Fair	
Bicycle LOS Score	3.33	2.30	3.18	0.00
Bicycle LOS	C	B	C	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	125.4	73.1	103.0	63.0	96.6
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	7	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.82	2.80	2.59	2.34	2.85
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	846	848	326	340	527
Effct. Green for Bike (s)	49.2	46.9	20.5	20.5	16.0
Cross Street Width (ft)	96.6	63.0	73.1	125.4	103.0
Through Lanes Number	1	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	820	782	342	342	267
Bicycle Delay (s/bike)	20.9	22.3	41.3	41.3	45.1
Bicycle Compliance	Fair	Fair	Poor	Poor	Poor
Bicycle LOS Score	4.43	3.22	3.22	3.76	4.01
Bicycle LOS	E	C	C	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	824	181	68	583	29	71	161	53	40	180	41
Future Volume (veh/h)	63	824	181	68	583	29	71	161	53	40	180	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	72	947	208	78	670	33	82	185	61	46	207	47
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	292	1331	292	229	1582	78	559	1249	400	564	1363	303
Arrive On Green	0.95	0.95	0.95	0.48	0.48	0.48	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	714	2790	612	467	3318	163	1080	2550	816	1088	2782	619
Grp Volume(v), veh/h	72	580	575	78	345	358	82	122	124	46	126	128
Grp Sat Flow(s),veh/h/ln	714	1710	1692	467	1710	1771	1080	1710	1656	1088	1710	1691
Q Serve(g_s), s	5.3	5.8	5.9	15.4	15.9	15.9	5.3	4.7	4.9	2.8	4.9	5.0
Cycle Q Clear(g_c), s	23.5	5.8	5.9	29.1	15.9	15.9	8.6	4.7	4.9	6.0	4.9	5.0
Prop In Lane	1.00		0.36	1.00		0.09	1.00		0.49	1.00		0.37
Lane Grp Cap(c), veh/h	292	815	807	229	815	845	559	838	811	564	838	828
V/C Ratio(X)	0.25	0.71	0.71	0.34	0.42	0.42	0.15	0.15	0.15	0.08	0.15	0.16
Avail Cap(c_a), veh/h	440	1169	1156	325	1169	1210	559	838	811	564	838	828
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.48	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.0	1.6	1.6	29.3	20.6	20.6	18.8	16.8	16.9	18.1	16.9	16.9
Incr Delay (d2), s/veh	0.2	0.6	0.6	0.7	0.3	0.3	0.6	0.4	0.4	0.3	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.1	2.0	2.0	7.5	7.8	1.7	2.3	2.4	0.9	2.4	2.4
LnGrp Delay(d),s/veh	6.2	2.1	2.2	30.0	20.9	20.9	19.3	17.2	17.3	18.3	17.2	17.3
LnGrp LOS	A	A	A	C	C	C	B	B	B	B	B	B
Approach Vol, veh/h		1227			781			328			300	
Approach Delay, s/veh		2.4			21.8			17.8			17.4	
Approach LOS		A			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		61.2		58.8		61.2		58.8
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		31.5		79.5		31.5		79.5
Max Q Clear Time (g_c+I1), s		10.6		25.5		8.0		31.1
Green Ext Time (p_c), s		3.4		23.8		3.5		22.8

Intersection Summary	
HCM 2010 Ctrl Delay	11.8
HCM 2010 LOS	B

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.72	2.68	2.48	2.44
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1227	781	328	300
Effct. Green for Bike (s)	59.9	59.9	56.1	56.1
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	998	998	935	935
Bicycle Delay (s/bike)	15.1	15.1	17.0	17.0
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	3.49	3.12	2.93	2.91
Bicycle LOS	C	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	552	182	151	376	92	156	537	118	124	616	136
Future Volume (veh/h)	124	552	182	151	376	92	156	537	118	124	616	136
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	146	649	214	178	442	108	184	632	139	146	725	160
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	202	875	392	227	928	415	239	1668	361	202	1572	343
Arrive On Green	0.12	0.26	0.26	0.28	0.54	0.54	0.15	0.41	0.41	0.12	0.39	0.39
Sat Flow, veh/h	1619	3420	1530	1619	3420	1530	1619	4045	876	1619	4039	882
Grp Volume(v), veh/h	146	649	214	178	442	108	184	510	261	146	587	298
Grp Sat Flow(s),veh/h/ln	1619	1710	1530	1619	1710	1530	1619	1638	1645	1619	1638	1644
Q Serve(g_s), s	10.4	20.9	14.5	12.2	9.6	4.5	13.1	13.0	13.3	10.4	16.0	16.2
Cycle Q Clear(g_c), s	10.4	20.9	14.5	12.2	9.6	4.5	13.1	13.0	13.3	10.4	16.0	16.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.53	1.00		0.54
Lane Grp Cap(c), veh/h	202	875	392	227	928	415	239	1351	678	202	1275	640
V/C Ratio(X)	0.72	0.74	0.55	0.78	0.48	0.26	0.77	0.38	0.38	0.72	0.46	0.47
Avail Cap(c_a), veh/h	290	983	440	290	983	440	290	1351	678	290	1275	640
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.70	0.73	0.73	0.73	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	41.0	38.6	41.5	22.2	21.0	49.2	24.5	24.6	50.5	27.3	27.3
Incr Delay (d2), s/veh	3.5	1.9	0.8	7.7	0.3	0.2	9.7	0.8	1.7	4.9	1.2	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	10.1	6.2	5.9	4.5	1.9	6.5	6.0	6.3	4.9	7.5	7.8
LnGrp Delay(d),s/veh	54.0	42.9	39.4	49.2	22.5	21.3	58.9	25.4	26.3	55.4	28.5	29.8
LnGrp LOS	D	D	D	D	C	C	E	C	C	E	C	C
Approach Vol, veh/h		1009			728			955			1031	
Approach Delay, s/veh		43.8			28.8			32.1			32.7	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	51.5	18.8	32.7	19.7	48.7	17.0	34.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	32.0	19.0	32.0	19.0	32.0	19.0	32.0
Max Q Clear Time (g_c+I1), s	12.4	15.3	14.2	22.9	15.1	18.2	12.4	11.6
Green Ext Time (p_c), s	0.2	9.9	0.2	5.3	0.2	8.7	0.2	8.7

Intersection Summary	
HCM 2010 Ctrl Delay	34.8
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.77	2.74	2.90	2.88
Pedestrian Crosswalk LOS	C	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1009	728	955	1031
Effct. Green for Bike (s)	31.3	32.6	43.6	42.1
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	522	543	727	702
Bicycle Delay (s/bike)	32.8	31.8	24.3	25.3
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.69	3.46	3.19	3.23
Bicycle LOS	D	C	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	174	794	618	86	57	135
Future Volume (veh/h)	174	794	618	86	57	135
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1600	1800
Adj Flow Rate, veh/h	205	934	727	101	67	159
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	359	1654	1201	537	736	1478
Arrive On Green	0.12	0.48	0.35	0.35	0.48	0.48
Sat Flow, veh/h	1619	3510	3510	1530	1524	3060
Grp Volume(v), veh/h	205	934	727	101	67	159
Grp Sat Flow(s),veh/h/ln	1619	1710	1710	1530	1524	1530
Q Serve(g_s), s	9.0	23.3	21.0	5.5	2.9	3.4
Cycle Q Clear(g_c), s	9.0	23.3	21.0	5.5	2.9	3.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	359	1654	1201	537	736	1478
V/C Ratio(X)	0.57	0.56	0.61	0.19	0.09	0.11
Avail Cap(c_a), veh/h	523	2565	1767	790	736	1478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	0.90	0.90	1.00	1.00
Uniform Delay (d), s/veh	21.6	22.0	32.1	27.0	16.8	16.9
Incr Delay (d2), s/veh	0.9	0.2	0.4	0.2	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	10.9	10.0	2.4	1.2	4.0
LnGrp Delay(d),s/veh	22.5	22.2	32.5	27.2	17.0	17.1
LnGrp LOS	C	C	C	C	B	B
Approach Vol, veh/h		1139	828		226	
Approach Delay, s/veh		22.2	31.9		17.1	
Approach LOS		C	C		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				60.0		60.0	15.9	44.1
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				87.5		23.5	23.5	59.5
Max Q Clear Time (g_c+I1), s				25.3		5.4	11.0	23.0
Green Ext Time (p_c), s				19.7		0.7	0.4	16.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.3
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.72	2.60	2.43
Pedestrian Crosswalk LOS	B	B	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	1139	828	226
Effct. Green for Bike (s)	58.1	37.0	57.9
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	968	617	965
Bicycle Delay (s/bike)	16.0	28.7	16.1
Bicycle Compliance	Fair	Fair	Fair
Bicycle LOS Score	3.42	3.18	2.66
Bicycle LOS	C	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	78	213	21	18	2	246	772	112	15	1008	267
Future Volume (veh/h)	143	78	213	21	18	2	246	772	112	15	1008	267
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	126	140	242	24	20	2	280	877	127	17	1145	303
Adj No. of Lanes	1	1	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	278	309	510	80	169	76	262	2962	427	59	1905	1115
Arrive On Green	0.17	0.17	0.17	0.05	0.05	0.05	0.16	0.68	0.68	0.04	0.56	0.56
Sat Flow, veh/h	1619	1800	1530	1619	3420	1530	1619	4340	626	1619	3420	1530
Grp Volume(v), veh/h	126	140	242	24	20	2	280	661	343	17	1145	303
Grp Sat Flow(s),veh/h/ln	1619	1800	1530	1619	1710	1530	1619	1638	1690	1619	1710	1530
Q Serve(g_s), s	9.3	9.3	16.7	1.9	0.7	0.2	21.5	10.7	10.8	1.4	29.6	8.9
Cycle Q Clear(g_c), s	9.3	9.3	16.7	1.9	0.7	0.2	21.5	10.7	10.8	1.4	29.6	8.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	278	309	510	80	169	76	262	2236	1153	59	1905	1115
V/C Ratio(X)	0.45	0.45	0.47	0.30	0.12	0.03	1.07	0.30	0.30	0.29	0.60	0.27
Avail Cap(c_a), veh/h	420	467	644	420	887	397	262	2236	1153	262	1905	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.5	49.5	35.1	61.0	60.4	60.2	55.8	8.4	8.4	62.4	19.6	6.1
Incr Delay (d2), s/veh	1.0	0.9	0.6	2.1	0.3	0.1	75.4	0.3	0.7	2.7	1.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	4.7	7.1	0.9	0.4	0.1	15.1	4.9	5.2	0.7	14.4	6.3
LnGrp Delay(d),s/veh	50.5	50.4	35.7	63.0	60.7	60.3	131.1	8.7	9.1	65.1	21.0	6.7
LnGrp LOS	D	D	D	E	E	E	F	A	A	E	C	A
Approach Vol, veh/h		508			46			1284			1465	
Approach Delay, s/veh		43.4			61.9			35.5			18.6	
Approach LOS		D			E			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	92.8		24.8	23.5	76.1		8.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	19.0	32.0		32.0	19.0	32.0		32.0
Max Q Clear Time (g_c+I1), s	3.4	12.8		18.7	23.5	31.6		3.9
Green Ext Time (p_c), s	0.0	14.9		1.7	0.0	0.3		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	29.6
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	66.5	66.5	66.5	66.5
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.54	2.38	2.92	2.97
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	493	46	1284	1465
Effct. Green for Bike (s)	19.6	10.0	96.3	63.2
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	295	150	1448	950
Bicycle Delay (s/bike)	48.3	56.9	5.1	18.3
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	3.49	2.90	3.18	3.70
Bicycle LOS	C	C	C	D

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	318	282	0	0	24	0	353	264	183	485	0
Future Volume (vph)	160	318	282	0	0	24	0	353	264	183	485	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0			1.5			2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91			1.00			0.91		0.97	0.95	
Frt	1.00	0.93			0.85			0.94		1.00	1.00	
Flt Protected	0.95	1.00			1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1470	3047			0			4598		2949	3420	
Flt Permitted	0.95	1.00			1.00			1.00		0.95	1.00	
Satd. Flow (perm)	1470	3047			0			4598		2949	3420	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	186	370	328	0	0	28	0	410	307	213	564	0
RTOR Reduction (vph)	0	77	0	0	28	0	0	138	0	0	0	0
Lane Group Flow (vph)	167	640	0	0	0	0	0	579	0	213	564	0
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6											
Actuated Green, G (s)	70.3	70.3			0.0			22.2		14.0	40.7	
Effective Green, g (s)	72.8	72.8			0.0			24.7		16.5	43.2	
Actuated g/C Ratio	0.61	0.61			0.00			0.21		0.14	0.36	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	891	1848			0			946		405	1231	
v/s Ratio Prot								c0.13		c0.07	0.16	
v/s Ratio Perm	0.11	0.21										
v/c Ratio	0.19	0.35			0.00			0.61		0.53	0.46	
Uniform Delay, d1	10.5	11.7			60.0			43.3		48.1	29.4	
Progression Factor	1.00	1.00			1.00			1.00		1.30	0.94	
Incremental Delay, d2	0.5	0.5			0.0			1.2		1.2	0.3	
Delay (s)	10.9	12.3			60.0			44.5		63.7	28.1	
Level of Service	B	B			E			D		E	C	
Approach Delay (s)		12.0			60.0			44.5			37.8	
Approach LOS		B			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Inland Center Drive & I-215 NB On Ramp/I-215 NB Off Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	379	280	481	192	365	0	0	307	23
Future Volume (vph)	0	0	0	379	280	481	192	365	0	0	307	23
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.95	0.85	1.00	1.00			0.99	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1615	1633	1454	1615	3420			6127	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1615	1633	1454	1615	3420			6127	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	0	0	0	474	350	601	240	456	0	0	384	29
RTOR Reduction (vph)	0	0	0	0	8	164	0	0	0	0	13	0
Lane Group Flow (vph)	0	0	0	474	492	287	240	456	0	0	400	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				70.7	70.7	70.7	22.2	40.3			13.6	
Effective Green, g (s)				73.2	73.2	73.2	24.7	42.8			16.1	
Actuated g/C Ratio				0.61	0.61	0.61	0.21	0.36			0.13	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				985	996	886	332	1219			822	
v/s Ratio Prot					c0.30		c0.15	0.13			c0.07	
v/s Ratio Perm				0.29		0.20						
v/c Ratio				0.48	0.49	0.32	0.72	0.37			0.49	
Uniform Delay, d1				12.9	13.1	11.4	44.5	28.7			48.1	
Progression Factor				1.00	1.00	1.00	1.55	0.80			0.58	
Incremental Delay, d2				1.7	1.8	1.0	7.3	0.2			0.4	
Delay (s)				14.6	14.8	12.3	76.3	23.2			28.2	
Level of Service				B	B	B	E	C			C	
Approach Delay (s)		0.0			14.0			41.5			28.2	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: I-215 NB Off Ramp/I-215 NB On Ramp & W Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	467	873	0	0	386	197	204	2	85	0	0	0
Future Volume (vph)	467	873	0	0	386	197	204	2	85	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4914	1530	1534	1549	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4914	1530	1534	1549	1454			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	502	939	0	0	415	212	219	2	91	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	178	0	2	50	0	0	0
Lane Group Flow (vph)	502	939	0	0	415	34	116	112	32	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	45.4	66.5			16.6	16.6	44.5	44.5	44.5			
Effective Green, g (s)	47.9	69.0			19.1	19.1	47.0	47.0	47.0			
Actuated g/C Ratio	0.40	0.58			0.16	0.16	0.39	0.39	0.39			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	644	1966			782	243	600	606	569			
v/s Ratio Prot	c0.31	c0.27			0.08							
v/s Ratio Perm						0.02	c0.08	0.07	0.02			
v/c Ratio	0.78	0.48			0.53	0.14	0.19	0.19	0.06			
Uniform Delay, d1	31.4	14.9			46.3	43.4	24.0	23.9	22.7			
Progression Factor	1.00	1.00			0.73	2.82	1.00	1.00	1.00			
Incremental Delay, d2	5.9	0.2			0.7	0.2	0.7	0.7	0.2			
Delay (s)	37.4	15.1			34.5	122.5	24.7	24.6	22.9			
Level of Service	D	B			C	F	C	C	C			
Approach Delay (s)		22.9			64.3			24.2			0.0	
Approach LOS		C			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	103	598	61	63	229	457	14	12	52	159	70	39
Future Volume (vph)	103	598	61	63	229	457	14	12	52	159	70	39
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800	1800	1800	1600	1800	1800	1700
Total Lost time (s)	2.0	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	1.00	1.00		0.97	0.95			0.97	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	1615	1800	1530		2949	3404			2949	1800	1530	1615
Flt Permitted	0.95	1.00	1.00		0.95	1.00			0.95	1.00	1.00	0.95
Satd. Flow (perm)	1615	1800	1530		2949	3404			2949	1800	1530	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	114	664	68	70	254	508	16	13	58	177	78	43
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	54	0
Lane Group Flow (vph)	114	664	68	0	324	524	0	0	71	177	24	43
Turn Type	Prot	NA	Prot	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot
Protected Phases	7	4	4	3	3	8		5	5	2	3	1
Permitted Phases											2	
Actuated Green, G (s)	16.6	46.7	46.7		14.3	44.4			5.0	18.0	32.3	5.0
Effective Green, g (s)	19.1	49.2	49.2		16.8	46.9			7.5	20.5	37.3	7.5
Actuated g/C Ratio	0.16	0.41	0.41		0.14	0.39			0.06	0.17	0.31	0.06
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5			4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	257	738	627		412	1330			184	307	501	100
v/s Ratio Prot	c0.07	c0.37	0.04		c0.11	0.15			0.02	c0.10	0.01	c0.03
v/s Ratio Perm											0.01	
v/c Ratio	0.44	0.90	0.11		0.79	0.39			0.39	0.58	0.05	0.43
Uniform Delay, d1	45.6	33.1	21.9		49.9	26.3			54.0	45.8	28.9	54.2
Progression Factor	0.76	1.17	0.98		0.78	1.52			1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	15.6	0.3		13.8	0.9			6.0	7.7	0.2	12.9
Delay (s)	39.9	54.1	21.8		52.5	40.8			60.1	53.4	29.1	67.1
Level of Service	D	D	C		D	D			E	D	C	E
Approach Delay (s)		49.6				45.2				49.1		
Approach LOS		D				D				D		

Intersection Summary			
HCM 2000 Control Delay	50.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations							
Traffic Volume (vph)	171	61	35	4	110	314	47
Future Volume (vph)	171	61	35	4	110	314	47
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1800	1800
Total Lost time (s)	2.0			2.0	2.0	2.0	
Lane Util. Factor	0.95			1.00	1.00	0.88	
Frt	0.95			1.00	1.00	0.85	
Flt Protected	1.00			0.95	0.95	1.00	
Satd. Flow (prot)	3235			1520	1520	2693	
Flt Permitted	1.00			0.95	0.95	1.00	
Satd. Flow (perm)	3235			1520	1520	2693	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	190	68	39	4	122	349	52
RTOR Reduction (vph)	10	0	0	0	0	118	0
Lane Group Flow (vph)	287	0	0	4	122	283	0
Turn Type	NA			Prot	Prot	Perm	
Protected Phases	6			9	9		
Permitted Phases						9	
Actuated Green, G (s)	18.0			13.5	13.5	13.5	
Effective Green, g (s)	20.5			16.0	16.0	16.0	
Actuated g/C Ratio	0.17			0.13	0.13	0.13	
Clearance Time (s)	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	552			202	202	359	
v/s Ratio Prot	0.09			0.00	0.08		
v/s Ratio Perm						c0.11	
v/c Ratio	0.52			0.02	0.60	0.79	
Uniform Delay, d1	45.3			45.2	49.0	50.4	
Progression Factor	1.00			0.93	0.91	0.88	
Incremental Delay, d2	3.5			0.2	12.1	15.4	
Delay (s)	48.7			42.0	56.9	59.5	
Level of Service	D			D	E	E	
Approach Delay (s)	51.1				58.8		
Approach LOS	D				E		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	824	181	68	583	29	71	161	53	40	180	41
Future Volume (vph)	63	824	181	68	583	29	71	161	53	40	180	41
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3328		1615	3396		1615	3293		1615	3325	
Flt Permitted	0.30	1.00		0.13	1.00		0.56	1.00		0.57	1.00	
Satd. Flow (perm)	506	3328		218	3396		954	3293		965	3325	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	72	947	208	78	670	33	82	185	61	46	207	47
RTOR Reduction (vph)	0	25	0	0	5	0	0	20	0	0	12	0
Lane Group Flow (vph)	72	1130	0	78	698	0	82	226	0	46	242	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	57.4	57.4		57.4	57.4		53.6	53.6		53.6	53.6	
Effective Green, g (s)	59.9	59.9		59.9	59.9		56.1	56.1		56.1	56.1	
Actuated g/C Ratio	0.50	0.50		0.50	0.50		0.47	0.47		0.47	0.47	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	252	1661		108	1695		445	1539		451	1554	
v/s Ratio Prot		0.34			0.21			0.07			0.07	
v/s Ratio Perm	0.14			c0.36			c0.09			0.05		
v/c Ratio	0.29	0.68		0.72	0.41		0.18	0.15		0.10	0.16	
Uniform Delay, d1	17.6	22.8		23.5	18.9		18.6	18.3		17.9	18.3	
Progression Factor	0.35	0.40		0.95	0.82		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.7		18.7	0.1		0.9	0.2		0.5	0.2	
Delay (s)	6.5	9.9		41.2	15.6		19.5	18.5		18.3	18.6	
Level of Service	A	A		D	B		B	B		B	B	
Approach Delay (s)		9.7			18.2			18.7			18.5	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	552	182	151	376	92	156	537	118	124	616	136
Future Volume (vph)	124	552	182	151	376	92	156	537	118	124	616	136
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3420	1530	1615	3420	1530	1615	4781		1615	4781	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1615	3420	1530	1615	3420	1530	1615	4781		1615	4781	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	146	649	214	178	442	108	184	632	139	146	725	160
RTOR Reduction (vph)	0	0	158	0	0	69	0	26	0	0	27	0
Lane Group Flow (vph)	146	649	56	178	442	39	184	745	0	146	858	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	15.4	28.8	28.8	16.7	30.1	30.1	16.9	41.1		15.4	39.6	
Effective Green, g (s)	17.9	31.3	31.3	19.2	32.6	32.6	19.4	43.6		17.9	42.1	
Actuated g/C Ratio	0.15	0.26	0.26	0.16	0.27	0.27	0.16	0.36		0.15	0.35	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	240	892	399	258	929	415	261	1737		240	1677	
v/s Ratio Prot	0.09	c0.19		c0.11	0.13		c0.11	0.16		0.09	c0.18	
v/s Ratio Perm			0.04			0.03						
v/c Ratio	0.61	0.73	0.14	0.69	0.48	0.09	0.70	0.43		0.61	0.51	
Uniform Delay, d1	47.8	40.5	34.0	47.6	36.6	32.7	47.6	28.8		47.8	30.8	
Progression Factor	0.68	1.25	4.60	0.89	1.62	3.99	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.9	2.7	0.1	7.1	0.4	0.1	8.4	0.8		4.3	1.1	
Delay (s)	36.4	53.1	156.7	49.3	59.4	130.3	56.0	29.6		52.1	31.9	
Level of Service	D	D	F	D	E	F	E	C		D	C	
Approach Delay (s)		72.7			67.5			34.7			34.8	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	51.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	174	794	618	86	57	135
Future Volume (vph)	174	794	618	86	57	135
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.92	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.98	1.00
Satd. Flow (prot)	1615	3420	3420	1530	2787	1392
Flt Permitted	0.16	1.00	1.00	1.00	0.98	1.00
Satd. Flow (perm)	272	3420	3420	1530	2787	1392
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	205	934	727	101	67	159
RTOR Reduction (vph)	0	0	0	70	41	41
Lane Group Flow (vph)	205	934	727	31	106	38
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	55.6	55.6	34.5	34.5	55.4	55.4
Effective Green, g (s)	58.1	58.1	37.0	37.0	57.9	57.9
Actuated g/C Ratio	0.48	0.48	0.31	0.31	0.48	0.48
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	345	1655	1054	471	1344	671
v/s Ratio Prot	c0.09	0.27	c0.21		c0.04	
v/s Ratio Perm	0.19			0.02		0.03
v/c Ratio	0.59	0.56	0.69	0.07	0.08	0.06
Uniform Delay, d1	21.4	22.0	36.5	29.3	16.7	16.5
Progression Factor	1.06	1.22	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.4	1.9	0.1	0.1	0.2
Delay (s)	25.0	27.1	38.4	29.4	16.8	16.7
Level of Service	C	C	D	C	B	B
Approach Delay (s)		26.8	37.3		16.8	
Approach LOS		C	D		B	

Intersection Summary			
HCM 2000 Control Delay	29.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	78	213	21	18	2	246	772	112	15	1008	267
Future Volume (vph)	143	78	213	21	18	2	246	772	112	15	1008	267
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1534	1684	1530	1615	3420	1530	1615	4821		1615	3420	1530
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1534	1684	1530	1615	3420	1530	1615	4821		1615	3420	1530
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	162	89	242	24	20	2	280	877	127	17	1145	303
RTOR Reduction (vph)	0	0	140	0	0	2	0	6	0	0	0	108
Lane Group Flow (vph)	124	128	102	24	20	0	280	998	0	17	1145	195
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	17.1	17.1	50.9	5.2	5.2	5.2	33.8	89.3		3.4	58.9	76.0
Effective Green, g (s)	19.6	19.6	55.9	7.7	7.7	7.7	36.3	91.8		5.9	61.4	81.0
Actuated g/C Ratio	0.15	0.15	0.42	0.06	0.06	0.06	0.27	0.69		0.04	0.46	0.61
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	226	248	643	93	198	88	440	3327		71	1578	954
v/s Ratio Prot	c0.08	0.08	0.04	c0.01	0.01		c0.17	0.21		0.01	c0.33	0.03
v/s Ratio Perm			0.02			0.00						0.10
v/c Ratio	0.55	0.52	0.16	0.26	0.10	0.00	0.64	0.30		0.24	0.73	0.20
Uniform Delay, d1	52.6	52.3	23.9	59.9	59.4	59.0	42.5	8.0		61.4	29.0	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.7	1.8	0.1	1.5	0.2	0.0	3.0	0.2		1.7	2.9	0.1
Delay (s)	55.3	54.1	24.1	61.4	59.6	59.0	45.6	8.3		63.1	31.9	11.7
Level of Service	E	D	C	E	E	E	D	A		E	C	B
Approach Delay (s)		39.7			60.5			16.4			28.1	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	133.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	348	306	0	0	12	1	460	251	438	567	0
Future Volume (veh/h)	227	348	306	0	0	12	1	460	251	438	567	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800				1800	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	244	374	329				1	495	270	471	610	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	764	849	722				30	922	390	585	1693	0
Arrive On Green	0.47	0.47	0.47				0.28	0.28	0.28	0.20	0.50	0.00
Sat Flow, veh/h	1619	1800	1530				1	3288	1392	2956	3510	0
Grp Volume(v), veh/h	244	374	329				271	225	270	471	610	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1530				1798	1491	1392	1478	1710	0
Q Serve(g_s), s	11.3	16.6	17.4				0.0	15.3	20.8	18.2	13.2	0.0
Cycle Q Clear(g_c), s	11.3	16.6	17.4				15.3	15.3	20.8	18.2	13.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	764	849	722				534	418	390	585	1693	0
V/C Ratio(X)	0.32	0.44	0.46				0.51	0.54	0.69	0.81	0.36	0.00
Avail Cap(c_a), veh/h	764	849	722				667	528	493	727	2109	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	1.00	0.81	0.81	0.00
Uniform Delay (d), s/veh	19.7	21.1	21.3				36.6	36.6	38.5	45.9	18.6	0.0
Incr Delay (d2), s/veh	1.1	1.7	2.1				0.7	1.1	2.9	4.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	8.6	7.7				7.7	6.4	8.3	7.8	6.2	0.0
LnGrp Delay(d),s/veh	20.8	22.8	23.4				37.3	37.7	41.5	50.3	18.7	0.0
LnGrp LOS	C	C	C				D	D	D	D	B	
Approach Vol, veh/h		947						766			1081	
Approach Delay, s/veh		22.5						38.9			32.5	
Approach LOS		C						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			25.7	35.7		58.6		61.4
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			20.2	22.8		19.4		15.2
Green Ext Time (p_c), s			1.0	8.4		5.2		12.5

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.38	2.29	2.65	2.77
Pedestrian Crosswalk LOS	B	B	B	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	947	13	766	1081
Effct. Green for Bike (s)	59.9	0.0	28.0	56.1
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	998	0	467	935
Bicycle Delay (s/bike)	15.1	0.0	35.3	17.0
Bicycle Compliance	Fair		Poor	Fair
Bicycle LOS Score	3.73	0.00	2.43	3.32
Bicycle LOS	D		B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	287	307	356	229	470	0	0	711	202
Future Volume (veh/h)	0	0	0	287	307	356	229	470	0	0	711	202
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1700	1800	1800	1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h				293	350	338	234	480	0	0	726	206
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				831	924	785	291	1551	0	0	1254	344
Arrive On Green				0.51	0.51	0.51	0.18	0.45	0.00	0.00	0.26	0.26
Sat Flow, veh/h				1619	1800	1530	1619	3510	0	0	5125	1336
Grp Volume(v), veh/h				293	350	338	234	480	0	0	691	241
Grp Sat Flow(s),veh/h/ln				1619	1800	1530	1619	1710	0	0	1548	1564
Q Serve(g_s), s				12.9	14.1	16.6	16.6	10.7	0.0	0.0	15.6	16.3
Cycle Q Clear(g_c), s				12.9	14.1	16.6	16.6	10.7	0.0	0.0	15.6	16.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.85
Lane Grp Cap(c), veh/h				831	924	785	291	1551	0	0	1195	402
V/C Ratio(X)				0.35	0.38	0.43	0.81	0.31	0.00	0.00	0.58	0.60
Avail Cap(c_a), veh/h				831	924	785	398	2109	0	0	1645	554
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.77	0.77	0.00	0.00	0.33	0.33
Uniform Delay (d), s/veh				17.4	17.6	18.2	47.2	20.9	0.0	0.0	38.9	39.1
Incr Delay (d2), s/veh				1.2	1.2	1.7	6.5	0.1	0.0	0.0	0.1	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.0	7.3	7.3	7.9	5.1	0.0	0.0	6.7	7.1
LnGrp Delay(d),s/veh				18.5	18.8	20.0	53.7	20.9	0.0	0.0	39.0	39.6
LnGrp LOS				B	B	B	D	C			D	D
Approach Vol, veh/h					981			714			932	
Approach Delay, s/veh					19.1			31.7			39.2	
Approach LOS					B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		63.6		56.4			23.5	32.9
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		39.5		71.5			27.0	40.0
Max Q Clear Time (g_c+I1), s		18.6		12.7			18.6	18.3
Green Ext Time (p_c), s		4.2		13.8			0.4	10.1

Intersection Summary	
HCM 2010 Ctrl Delay	29.7
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	106.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.21	2.28	2.57	2.67
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	969	714	932
Effct. Green for Bike (s)	0.0	60.8	55.2	28.8
Cross Street Width (ft)	75.9	106.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	1013	920	480
Bicycle Delay (s/bike)	0.0	14.6	17.5	34.7
Bicycle Compliance		Fair	Fair	Poor
Bicycle LOS Score	0.00	4.79	2.75	2.59
Bicycle LOS		E	B	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	560	798	0	0	623	518	253	5	80	0	0	0
Future Volume (veh/h)	560	798	0	0	623	518	253	5	80	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	596	849	0	0	663	551	297	0	58			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	649	2339	0	0	1310	408	915	0	432			
Arrive On Green	0.40	0.68	0.00	0.00	0.27	0.27	0.28	0.00	0.28			
Sat Flow, veh/h	1619	3510	0	0	5076	1530	3238	0	1530			
Grp Volume(v), veh/h	596	849	0	0	663	551	297	0	58			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1638	1530	1619	0	1530			
Q Serve(g_s), s	41.9	12.5	0.0	0.0	13.7	32.0	8.7	0.0	3.4			
Cycle Q Clear(g_c), s	41.9	12.5	0.0	0.0	13.7	32.0	8.7	0.0	3.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	649	2339	0	0	1310	408	915	0	432			
V/C Ratio(X)	0.92	0.36	0.00	0.00	0.51	1.35	0.32	0.00	0.13			
Avail Cap(c_a), veh/h	796	2651	0	0	1310	408	915	0	432			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.74	0.74	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.1	8.0	0.0	0.0	37.3	44.0	34.0	0.0	32.1			
Incr Delay (d2), s/veh	13.8	0.1	0.0	0.0	0.2	169.5	0.9	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	21.2	5.9	0.0	0.0	6.2	32.7	4.0	0.0	1.5			
LnGrp Delay(d),s/veh	47.9	8.1	0.0	0.0	37.5	213.5	34.9	0.0	32.7			
LnGrp LOS	D	A			D	F	C		C			
Approach Vol, veh/h		1445			1214			355				
Approach Delay, s/veh		24.5			117.4			34.6				
Approach LOS		C			F			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		35.9		84.1			50.1	34.0
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		20.5		90.5			56.5	29.5
Max Q Clear Time (g_c+I1), s		10.7		14.5			43.9	34.0
Green Ext Time (p_c), s		0.9		22.9			1.7	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	63.1
HCM 2010 LOS	E

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.86	2.74	2.08	2.30
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1445	1214	359	0
Effct. Green for Bike (s)	82.9	28.8	33.1	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1382	480	552	0
Bicycle Delay (s/bike)	5.7	34.7	31.5	0.0
Bicycle Compliance	Good	Poor	Poor	
Bicycle LOS Score	3.33	2.62	3.26	0.00
Bicycle LOS	C	B	C	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	125.4	73.1	103.0	63.0	96.6
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	7	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.86	2.84	2.68	2.39	2.88
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	705	1208	725	417	588
Effct. Green for Bike (s)	38.5	45.3	27.6	20.5	14.0
Cross Street Width (ft)	96.6	63.0	73.1	125.4	103.0
Through Lanes Number	1	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	642	755	460	342	233
Bicycle Delay (s/bike)	27.7	23.3	35.6	41.3	46.8
Bicycle Compliance	Fair	Fair	Poor	Poor	Poor
Bicycle LOS Score	4.20	3.52	3.87	3.82	4.11
Bicycle LOS	D	D	D	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	774	118	78	895	41	152	283	75	38	282	70
Future Volume (veh/h)	67	774	118	78	895	41	152	283	75	38	282	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	73	841	128	85	973	45	165	308	82	41	307	76
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	225	1524	232	201	1704	79	429	1220	320	425	1240	302
Arrive On Green	0.17	0.17	0.17	0.51	0.51	0.51	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	531	2977	453	556	3329	154	960	2683	703	953	2728	665
Grp Volume(v), veh/h	73	483	486	85	500	518	165	195	195	41	191	192
Grp Sat Flow(s),veh/h/ln	531	1710	1720	556	1710	1773	960	1710	1676	953	1710	1683
Q Serve(g_s), s	15.5	31.1	31.1	16.2	24.2	24.2	15.3	8.4	8.6	3.3	8.2	8.4
Cycle Q Clear(g_c), s	39.7	31.1	31.1	47.2	24.2	24.2	23.8	8.4	8.6	12.0	8.2	8.4
Prop In Lane	1.00		0.26	1.00		0.09	1.00		0.42	1.00		0.40
Lane Grp Cap(c), veh/h	225	875	881	201	875	908	429	778	762	425	778	765
V/C Ratio(X)	0.32	0.55	0.55	0.42	0.57	0.57	0.38	0.25	0.26	0.10	0.25	0.25
Avail Cap(c_a), veh/h	236	912	917	213	912	946	429	778	762	425	778	765
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.48	0.62	0.62	0.62	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	37.2	37.2	39.5	20.2	20.2	27.5	20.1	20.2	23.9	20.1	20.1
Incr Delay (d2), s/veh	0.4	0.3	0.3	0.9	0.5	0.5	2.6	0.8	0.8	0.5	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	14.8	14.9	2.5	11.5	11.9	4.4	4.1	4.2	0.9	4.0	4.1
LnGrp Delay(d),s/veh	52.6	37.6	37.6	40.4	20.7	20.7	30.1	20.9	21.0	24.3	20.8	20.9
LnGrp LOS	D	D	D	D	C	C	C	C	C	C	C	C
Approach Vol, veh/h		1042			1103			555			424	
Approach Delay, s/veh		38.6			22.2			23.7			21.2	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		56.6		63.4		56.6		63.4
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		49.5		61.5		49.5		61.5
Max Q Clear Time (g_c+I1), s		25.8		41.7		14.0		49.2
Green Ext Time (p_c), s		6.0		14.2		6.6		9.7

Intersection Summary	
HCM 2010 Ctrl Delay	27.8
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.76	2.72	2.53	2.49
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1042	1103	555	424
Effct. Green for Bike (s)	50.7	50.7	65.3	65.3
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	845	845	1088	1088
Bicycle Delay (s/bike)	20.0	20.0	12.5	12.5
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	3.34	3.39	3.12	3.01
Bicycle LOS	C	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	485	203	175	594	122	183	723	108	135	758	126
Future Volume (veh/h)	184	485	203	175	594	122	183	723	108	135	758	126
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	196	516	216	186	632	130	195	769	115	144	806	134
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	251	885	396	239	860	385	250	1742	259	200	1583	261
Arrive On Green	0.15	0.26	0.26	0.20	0.33	0.33	0.15	0.40	0.40	0.12	0.37	0.37
Sat Flow, veh/h	1619	3420	1530	1619	3420	1530	1619	4321	641	1619	4250	702
Grp Volume(v), veh/h	196	516	216	186	632	130	195	582	302	144	620	320
Grp Sat Flow(s),veh/h/ln	1619	1710	1530	1619	1710	1530	1619	1638	1687	1619	1638	1676
Q Serve(g_s), s	14.0	15.8	14.6	13.1	19.6	7.6	13.9	15.5	15.6	10.3	17.6	17.8
Cycle Q Clear(g_c), s	14.0	15.8	14.6	13.1	19.6	7.6	13.9	15.5	15.6	10.3	17.6	17.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		0.42
Lane Grp Cap(c), veh/h	251	885	396	239	860	385	250	1321	680	200	1220	624
V/C Ratio(X)	0.78	0.58	0.55	0.78	0.73	0.34	0.78	0.44	0.44	0.72	0.51	0.51
Avail Cap(c_a), veh/h	290	983	440	290	983	440	290	1321	680	290	1220	624
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	0.71	0.71	0.71	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	38.8	38.4	46.4	36.4	32.4	48.8	26.0	26.0	50.6	29.1	29.2
Incr Delay (d2), s/veh	8.2	0.5	0.8	7.6	1.8	0.4	11.2	1.1	2.1	4.8	1.5	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	7.5	6.3	6.4	9.5	3.3	7.0	7.1	7.7	4.9	8.2	8.7
LnGrp Delay(d),s/veh	57.0	39.3	39.2	54.0	38.2	32.8	60.0	27.1	28.1	55.4	30.7	32.2
LnGrp LOS	E	D	D	D	D	C	E	C	C	E	C	C
Approach Vol, veh/h		928			948			1079			1084	
Approach Delay, s/veh		43.0			40.5			33.3			34.4	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.8	50.4	19.7	33.1	20.5	46.7	20.6	32.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	32.0	19.0	32.0	19.0	32.0	19.0	32.0
Max Q Clear Time (g_c+I1), s	12.3	17.6	15.1	17.8	15.9	19.8	16.0	21.6
Green Ext Time (p_c), s	0.2	9.7	0.2	7.5	0.2	8.6	0.1	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	37.5
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.78	2.75	2.93	2.92
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	928	948	1079	1084
Effct. Green for Bike (s)	31.1	30.8	43.6	41.5
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	518	513	727	692
Bicycle Delay (s/bike)	32.9	33.2	24.3	25.7
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.62	3.64	3.25	3.26
Bicycle LOS	D	D	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	121	729	891	36	101	167
Future Volume (veh/h)	121	729	891	36	101	167
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1600	1800
Adj Flow Rate, veh/h	138	828	1012	41	102	204
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	294	1826	1489	666	659	1324
Arrive On Green	0.08	0.53	0.44	0.44	0.43	0.43
Sat Flow, veh/h	1619	3510	3510	1530	1524	3060
Grp Volume(v), veh/h	138	828	1012	41	102	204
Grp Sat Flow(s),veh/h/ln	1619	1710	1710	1530	1524	1530
Q Serve(g_s), s	5.2	17.9	28.5	1.9	4.9	4.9
Cycle Q Clear(g_c), s	5.2	17.9	28.5	1.9	4.9	4.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	294	1826	1489	666	659	1324
V/C Ratio(X)	0.47	0.45	0.68	0.06	0.15	0.15
Avail Cap(c_a), veh/h	391	2594	2052	918	659	1324
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.94	0.94	1.00	1.00
Uniform Delay (d), s/veh	19.5	17.2	27.2	19.7	20.7	20.7
Incr Delay (d2), s/veh	0.9	0.1	0.5	0.0	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	8.4	13.5	0.8	2.1	5.3
LnGrp Delay(d),s/veh	20.4	17.3	27.7	19.7	21.2	20.9
LnGrp LOS	C	B	C	B	C	C
Approach Vol, veh/h		966	1053		306	
Approach Delay, s/veh		17.8	27.4		21.0	
Approach LOS		B	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				66.1		53.9	11.8	54.3
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				88.5		22.5	14.5	69.5
Max Q Clear Time (g_c+I1), s				19.9		6.9	7.2	30.5
Green Ext Time (p_c), s				23.6		0.9	0.2	19.3

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.74	2.64	2.42
Pedestrian Crosswalk LOS	B	B	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	966	1053	305
Effct. Green for Bike (s)	67.7	50.7	48.3
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	1128	845	805
Bicycle Delay (s/bike)	11.4	20.0	21.4
Bicycle Compliance	Fair	Fair	Fair
Bicycle LOS Score	3.27	3.36	2.73
Bicycle LOS	C	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	305	8	282	27	25	2	146	1181	17	7	1011	208
Future Volume (veh/h)	305	8	282	27	25	2	146	1181	17	7	1011	208
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	353	0	320	31	28	2	166	1342	19	8	1149	236
Adj No. of Lanes	2	0	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	703	0	537	85	179	80	216	3205	45	46	1836	1153
Arrive On Green	0.22	0.00	0.22	0.05	0.05	0.05	0.13	0.64	0.64	0.03	0.54	0.54
Sat Flow, veh/h	3238	0	1530	1619	3420	1530	1619	4993	71	1619	3420	1530
Grp Volume(v), veh/h	353	0	320	31	28	2	166	881	480	8	1149	236
Grp Sat Flow(s),veh/h/ln	1619	0	1530	1619	1710	1530	1619	1638	1788	1619	1710	1530
Q Serve(g_s), s	12.7	0.0	22.8	2.5	1.0	0.2	13.2	17.5	17.5	0.6	31.2	6.0
Cycle Q Clear(g_c), s	12.7	0.0	22.8	2.5	1.0	0.2	13.2	17.5	17.5	0.6	31.2	6.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	703	0	537	85	179	80	216	2103	1147	46	1836	1153
V/C Ratio(X)	0.50	0.00	0.60	0.37	0.16	0.02	0.77	0.42	0.42	0.17	0.63	0.20
Avail Cap(c_a), veh/h	840	0	601	420	887	397	262	2103	1147	262	1836	1153
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.00	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	0.0	35.5	60.9	60.2	59.8	55.6	11.7	11.7	63.1	21.5	4.8
Incr Delay (d2), s/veh	0.5	0.0	1.2	2.6	0.4	0.1	10.6	0.6	1.1	1.8	1.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	9.8	1.2	0.5	0.1	6.5	8.0	8.9	0.3	15.1	4.8
LnGrp Delay(d),s/veh	46.3	0.0	36.7	63.5	60.6	59.9	66.2	12.3	12.8	64.9	23.1	5.2
LnGrp LOS	D		D	E	E	E	E	B	B	E	C	A
Approach Vol, veh/h		673			61			1527			1393	
Approach Delay, s/veh		41.7			62.0			18.3			20.3	
Approach LOS		D			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	87.4		30.9	19.8	73.4		9.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	19.0	32.0		32.0	19.0	32.0		32.0
Max Q Clear Time (g_c+I1), s	2.6	19.5		24.8	15.2	33.2		4.5
Green Ext Time (p_c), s	0.0	11.0		1.5	0.1	0.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	24.1
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	66.5	66.5	66.5	66.5
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.54	2.34	2.97	3.05
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	676	61	1527	1393
Effct. Green for Bike (s)	24.3	10.6	91.7	70.9
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	365	159	1379	1066
Bicycle Delay (s/bike)	44.4	56.3	6.4	14.5
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	3.79	2.91	3.32	3.64
Bicycle LOS	D	C	C	D

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	348	306	0	0	12	1	460	251	438	567	0
Future Volume (vph)	227	348	306	0	0	12	1	460	251	438	567	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0			1.5			2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91			1.00			0.91		0.97	0.95	
Frt	1.00	0.93			0.85			0.95		1.00	1.00	
Flt Protected	0.95	1.00			1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1470	3049			0			4654		2949	3420	
Flt Permitted	0.95	1.00			1.00			0.94		0.95	1.00	
Satd. Flow (perm)	1470	3049			0			4373		2949	3420	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	244	374	329	0	0	13	1	495	270	471	610	0
RTOR Reduction (vph)	0	96	0	0	13	0	0	97	0	0	0	0
Lane Group Flow (vph)	220	631	0	0	0	0	0	669	0	471	610	0
Turn Type	Perm	NA					Perm	NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6						4					
Actuated Green, G (s)	57.4	57.4			0.0			25.5		23.6	53.6	
Effective Green, g (s)	59.9	59.9			0.0			28.0		26.1	56.1	
Actuated g/C Ratio	0.50	0.50			0.00			0.23		0.22	0.47	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	733	1521			0			1020		641	1598	
v/s Ratio Prot										c0.16	0.18	
v/s Ratio Perm	0.15	0.21						c0.15				
v/c Ratio	0.30	0.41			0.00			0.66		0.73	0.38	
Uniform Delay, d1	17.7	19.0			60.0			41.6		43.7	20.7	
Progression Factor	1.00	1.00			1.00			1.00		1.62	0.67	
Incremental Delay, d2	1.0	0.8			0.0			1.5		4.1	0.1	
Delay (s)	18.8	19.8			60.0			43.2		74.8	14.0	
Level of Service	B	B			E			D		E	B	
Approach Delay (s)		19.6			60.0			43.2			40.5	
Approach LOS		B			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	287	307	356	229	470	0	0	711	202
Future Volume (vph)	0	0	0	287	307	356	229	470	0	0	711	202
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.98	0.85	1.00	1.00			0.97	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1615	1677	1454	1615	3420			5987	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1615	1677	1454	1615	3420			5987	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	293	313	363	234	480	0	0	726	206
RTOR Reduction (vph)	0	0	0	0	3	156	0	0	0	0	50	0
Lane Group Flow (vph)	0	0	0	293	357	160	234	480	0	0	882	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				58.3	58.3	58.3	21.9	52.7			26.3	
Effective Green, g (s)				60.8	60.8	60.8	24.4	55.2			28.8	
Actuated g/C Ratio				0.51	0.51	0.51	0.20	0.46			0.24	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				818	849	736	328	1573			1436	
v/s Ratio Prot					c0.21		c0.14	0.14			c0.15	
v/s Ratio Perm				0.18		0.11						
v/c Ratio				0.36	0.42	0.22	0.71	0.31			0.61	
Uniform Delay, d1				17.8	18.5	16.4	44.5	20.4			40.6	
Progression Factor				1.00	1.00	1.00	1.49	0.88			0.89	
Incremental Delay, d2				1.2	1.5	0.7	6.7	0.1			0.7	
Delay (s)				19.1	20.1	17.1	73.1	18.1			36.8	
Level of Service				B	C	B	E	B			D	
Approach Delay (s)		0.0			18.8			36.1			36.8	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: I-215 NB Off Ramp/I-215 NB On Ramp & W Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	560	798	0	0	623	518	253	5	80	0	0	0
Future Volume (vph)	560	798	0	0	623	518	253	5	80	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4914	1530	1534	1552	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4914	1530	1534	1552	1454			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	596	849	0	0	663	551	269	5	85	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	338	0	2	55	0	0	0
Lane Group Flow (vph)	596	849	0	0	663	213	143	138	21	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	49.7	80.5			26.3	26.3	30.5	30.5	30.5			
Effective Green, g (s)	52.2	83.0			28.8	28.8	33.0	33.0	33.0			
Actuated g/C Ratio	0.44	0.69			0.24	0.24	0.28	0.28	0.28			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	702	2365			1179	367	421	426	399			
v/s Ratio Prot	c0.37	0.25			0.13							
v/s Ratio Perm						c0.14	c0.09	0.09	0.01			
v/c Ratio	0.85	0.36			0.56	0.58	0.34	0.32	0.05			
Uniform Delay, d1	30.4	7.6			40.1	40.3	34.8	34.6	32.0			
Progression Factor	1.00	1.00			0.95	1.83	1.00	1.00	1.00			
Incremental Delay, d2	9.4	0.1			0.5	1.9	2.2	2.0	0.2			
Delay (s)	39.8	7.7			38.5	75.7	37.0	36.6	32.2			
Level of Service	D	A			D	E	D	D	C			
Approach Delay (s)		20.9			55.4			35.8			0.0	
Approach LOS		C			E			D			A	

Intersection Summary			
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	79	504	71	2	110	346	652	16	47	223	282	122
Future Volume (vph)	79	504	71	2	110	346	652	16	47	223	282	122
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1600	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0	2.0			2.0	2.0			2.0	2.0	2.0
Lane Util. Factor	1.00	1.00	1.00			0.97	0.95			0.97	1.00	1.00
Frt	1.00	1.00	0.85			1.00	1.00			1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00			0.95	1.00			0.95	1.00	1.00
Satd. Flow (prot)	1615	1800	1530			2949	3408			2949	1800	1530
Flt Permitted	0.95	1.00	1.00			0.95	1.00			0.95	1.00	1.00
Satd. Flow (perm)	1615	1800	1530			2949	3408			2949	1800	1530
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	85	542	76	2	118	372	701	17	51	240	303	131
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	76
Lane Group Flow (vph)	85	542	78	0	0	490	718	0	0	291	303	55
Turn Type	Prot	NA	Prot		Prot	Prot	NA		Prot	Prot	NA	pm+ov
Protected Phases	7	4	4		3	3	8		5!	5	2	3
Permitted Phases												2
Actuated Green, G (s)	13.1	36.0	36.0			19.9	42.8			12.1	25.1	45.0
Effective Green, g (s)	15.6	38.5	38.5			22.4	45.3			14.6	27.6	50.0
Actuated g/C Ratio	0.13	0.32	0.32			0.19	0.38			0.12	0.23	0.42
Clearance Time (s)	4.5	4.5	4.5			4.5	4.5			4.5	4.5	4.5
Lane Grp Cap (vph)	209	577	490			550	1286			358	414	663
v/s Ratio Prot	0.05	c0.30	0.05			c0.17	0.21			c0.10	c0.17	0.02
v/s Ratio Perm												0.02
v/c Ratio	0.41	0.94	0.16			0.89	0.56			0.81	0.73	0.08
Uniform Delay, d1	47.9	39.6	29.2			47.6	29.5			51.4	42.8	21.1
Progression Factor	0.89	0.93	0.89			0.54	0.79			1.00	1.00	1.00
Incremental Delay, d2	5.6	24.6	0.7			17.2	1.5			18.0	10.9	0.2
Delay (s)	48.3	61.6	26.5			43.1	24.8			69.4	53.7	21.4
Level of Service	D	E	C			D	C			E	D	C
Approach Delay (s)		56.1					32.2				54.1	
Approach LOS		E					C				D	

Intersection Summary			
HCM 2000 Control Delay	47.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	29	232	67	60	13	123	317	94
Future Volume (vph)	29	232	67	60	13	123	317	94
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1600	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	
Lane Util. Factor	1.00	0.95			1.00	1.00	0.88	
Frt	1.00	0.95			1.00	1.00	0.85	
Flt Protected	0.95	1.00			0.95	0.95	1.00	
Satd. Flow (prot)	1615	3238			1520	1520	2693	
Flt Permitted	0.95	1.00			0.95	0.95	1.00	
Satd. Flow (perm)	1615	3238			1520	1520	2693	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	31	249	72	65	14	132	341	101
RTOR Reduction (vph)	0	14	0	0	0	0	193	0
Lane Group Flow (vph)	31	372	0	0	14	132	249	0
Turn Type	Prot	NA			Prot	Prot	Perm	
Protected Phases	1	6			9	9		
Permitted Phases							9	
Actuated Green, G (s)	5.0	18.0			11.5	11.5	11.5	
Effective Green, g (s)	7.5	20.5			14.0	14.0	14.0	
Actuated g/C Ratio	0.06	0.17			0.12	0.12	0.12	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	100	553			177	177	314	
v/s Ratio Prot	0.02	0.11			0.01	0.09		
v/s Ratio Perm							c0.09	
v/c Ratio	0.31	0.67			0.08	0.75	0.79	
Uniform Delay, d1	53.8	46.6			47.3	51.3	51.6	
Progression Factor	1.00	1.00			0.81	0.78	0.65	
Incremental Delay, d2	7.9	6.4			0.8	24.0	18.0	
Delay (s)	61.7	53.0			39.2	64.2	51.8	
Level of Service	E	D			D	E	D	
Approach Delay (s)		53.7				54.3		
Approach LOS		D				D		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	774	118	78	895	41	152	283	75	38	282	70
Future Volume (vph)	67	774	118	78	895	41	152	283	75	38	282	70
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3352		1615	3397		1615	3312		1615	3318	
Flt Permitted	0.13	1.00		0.15	1.00		0.49	1.00		0.48	1.00	
Satd. Flow (perm)	220	3352		251	3397		825	3312		818	3318	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	841	128	85	973	45	165	308	82	41	307	76
RTOR Reduction (vph)	0	13	0	0	3	0	0	16	0	0	15	0
Lane Group Flow (vph)	73	956	0	85	1015	0	165	374	0	41	368	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	48.2	48.2		48.2	48.2		62.8	62.8		62.8	62.8	
Effective Green, g (s)	50.7	50.7		50.7	50.7		65.3	65.3		65.3	65.3	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.54	0.54		0.54	0.54	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	92	1416		106	1435		448	1802		445	1805	
v/s Ratio Prot		0.29			0.30			0.11			0.11	
v/s Ratio Perm	0.33			c0.34			c0.20			0.05		
v/c Ratio	0.79	0.68		0.80	0.71		0.37	0.21		0.09	0.20	
Uniform Delay, d1	30.1	28.0		30.3	28.5		15.6	14.1		13.1	14.0	
Progression Factor	0.77	0.65		1.23	1.20		1.00	1.00		1.00	1.00	
Incremental Delay, d2	22.9	0.7		29.5	1.4		2.3	0.3		0.4	0.3	
Delay (s)	46.0	19.1		66.7	35.6		17.9	14.3		13.5	14.3	
Level of Service	D	B		E	D		B	B		B	B	
Approach Delay (s)		21.0			38.0			15.4			14.2	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	485	203	175	594	122	183	723	108	135	758	126
Future Volume (vph)	184	485	203	175	594	122	183	723	108	135	758	126
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3420	1530	1615	3420	1530	1615	4818		1615	4809	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1615	3420	1530	1615	3420	1530	1615	4818		1615	4809	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	196	516	216	186	632	130	195	769	115	144	806	134
RTOR Reduction (vph)	0	0	160	0	0	71	0	15	0	0	18	0
Lane Group Flow (vph)	196	516	56	186	632	59	195	869	0	144	922	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	17.3	28.6	28.6	17.0	28.3	28.3	17.4	41.1		15.3	39.0	
Effective Green, g (s)	19.8	31.1	31.1	19.5	30.8	30.8	19.9	43.6		17.8	41.5	
Actuated g/C Ratio	0.17	0.26	0.26	0.16	0.26	0.26	0.17	0.36		0.15	0.35	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	266	886	396	262	877	392	267	1750		239	1663	
v/s Ratio Prot	c0.12	0.15		0.12	c0.18		c0.12	0.18		0.09	c0.19	
v/s Ratio Perm			0.04			0.04						
v/c Ratio	0.74	0.58	0.14	0.71	0.72	0.15	0.73	0.50		0.60	0.55	
Uniform Delay, d1	47.6	38.8	34.2	47.6	40.7	34.5	47.5	29.7		47.8	31.8	
Progression Factor	0.56	1.01	4.47	0.88	1.58	3.17	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	0.9	0.1	7.8	2.7	0.2	9.8	1.0		4.2	1.3	
Delay (s)	35.9	39.9	152.8	49.5	66.8	109.5	57.3	30.7		52.0	33.1	
Level of Service	D	D	F	D	E	F	E	C		D	C	
Approach Delay (s)		65.4			69.3			35.5			35.6	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	121	729	891	36	101	167
Future Volume (vph)	121	729	891	36	101	167
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.93	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.97	1.00
Satd. Flow (prot)	1615	3420	3420	1530	2818	1392
Flt Permitted	0.13	1.00	1.00	1.00	0.97	1.00
Satd. Flow (perm)	215	3420	3420	1530	2818	1392
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	138	828	1012	41	115	190
RTOR Reduction (vph)	0	0	0	24	56	58
Lane Group Flow (vph)	138	828	1013	17	152	39
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	65.2	65.2	48.2	48.2	45.8	45.8
Effective Green, g (s)	67.7	67.7	50.7	50.7	48.3	48.3
Actuated g/C Ratio	0.56	0.56	0.42	0.42	0.40	0.40
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	296	1929	1444	646	1134	560
v/s Ratio Prot	c0.06	0.24	c0.30		c0.05	
v/s Ratio Perm	0.20			0.01		0.03
v/c Ratio	0.47	0.43	0.70	0.03	0.13	0.07
Uniform Delay, d1	17.4	15.0	28.4	20.2	22.6	22.0
Progression Factor	1.39	1.54	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	1.6	0.0	0.2	0.2
Delay (s)	25.3	23.4	30.0	20.3	22.9	22.3
Level of Service	C	C	C	C	C	C
Approach Delay (s)		23.7	29.6		22.7	
Approach LOS		C	C		C	

Intersection Summary			
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	8	282	27	25	2	146	1181	17	7	1011	208
Future Volume (vph)	305	8	282	27	25	2	146	1181	17	7	1011	208
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1534	1632	1530	1615	3420	1530	1615	4904		1615	3420	1530
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1534	1632	1530	1615	3420	1530	1615	4904		1615	3420	1530
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	347	9	320	31	28	2	166	1342	19	8	1149	236
RTOR Reduction (vph)	0	0	150	0	0	2	0	0	0	0	0	62
Lane Group Flow (vph)	177	179	170	31	28	0	166	1361	0	8	1149	174
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	21.8	21.8	40.6	7.0	7.0	7.0	18.8	84.7		1.5	67.4	89.2
Effective Green, g (s)	24.3	24.3	45.6	9.5	9.5	9.5	21.3	87.2		4.0	69.9	94.2
Actuated g/C Ratio	0.18	0.18	0.34	0.07	0.07	0.07	0.16	0.66		0.03	0.53	0.71
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	280	298	524	115	244	109	258	3215		48	1797	1106
v/s Ratio Prot	c0.12	0.11	0.05	c0.02	0.01		c0.10	0.28		0.00	c0.34	0.03
v/s Ratio Perm			0.06			0.00						0.08
v/c Ratio	0.63	0.60	0.32	0.27	0.11	0.00	0.64	0.42		0.17	0.64	0.16
Uniform Delay, d1	50.2	49.9	32.3	58.5	57.8	57.3	52.3	10.9		62.9	22.5	6.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.6	3.4	0.4	1.3	0.2	0.0	5.4	0.4		1.6	1.8	0.1
Delay (s)	54.8	53.3	32.7	59.7	58.0	57.3	57.7	11.3		64.5	24.3	6.4
Level of Service	D	D	C	E	E	E	E	B		E	C	A
Approach Delay (s)		43.9			58.9			16.4			21.5	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	133.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	318	282	0	0	24	0	353	264	194	485	0
Future Volume (veh/h)	160	318	282	0	0	24	0	353	264	194	485	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800				0	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	186	370	328				0	410	307	226	564	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	892	992	843				0	927	433	343	1421	0
Arrive On Green	0.55	0.55	0.55				0.00	0.28	0.28	0.12	0.42	0.00
Sat Flow, veh/h	1619	1800	1530				0	3438	1530	2956	3510	0
Grp Volume(v), veh/h	186	370	328				0	410	307	226	564	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1530				0	1638	1530	1478	1710	0
Q Serve(g_s), s	7.0	13.9	14.7				0.0	12.3	21.6	8.8	13.8	0.0
Cycle Q Clear(g_c), s	7.0	13.9	14.7				0.0	12.3	21.6	8.8	13.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	892	992	843				0	927	433	343	1421	0
V/C Ratio(X)	0.21	0.37	0.39				0.00	0.44	0.71	0.66	0.40	0.00
Avail Cap(c_a), veh/h	892	992	843				0	1160	542	727	2109	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.86	0.86	0.00
Uniform Delay (d), s/veh	13.7	15.2	15.4				0.0	35.3	38.6	50.8	24.5	0.0
Incr Delay (d2), s/veh	0.5	1.1	1.4				0.0	0.3	3.2	1.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	7.2	6.5				0.0	5.6	9.5	3.7	6.5	0.0
LnGrp Delay(d),s/veh	14.2	16.3	16.7				0.0	35.6	41.8	52.6	24.7	0.0
LnGrp LOS	B	B	B					D	D	D	C	
Approach Vol, veh/h		884						717			790	
Approach Delay, s/veh		16.0						38.2			32.7	
Approach LOS		B						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			15.9	36.0		68.1		51.9
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			10.8	23.6		16.7		15.8
Green Ext Time (p_c), s			0.6	7.9		5.2		11.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.2
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.37	2.19	2.64	2.70
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	884	28	717	790
Effct. Green for Bike (s)	72.3	0.0	24.7	43.7
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1205	0	412	728
Bicycle Delay (s/bike)	9.5	0.0	37.8	24.3
Bicycle Compliance	Good		Poor	Fair
Bicycle LOS Score	3.68	0.00	2.40	3.08
Bicycle LOS	D		B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	379	280	503	192	365	0	0	318	23
Future Volume (veh/h)	0	0	0	379	280	503	192	365	0	0	318	23
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1700	1800	1800	1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h				474	559	490	240	456	0	0	398	29
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				992	1103	938	296	1210	0	0	916	65
Arrive On Green				0.61	0.61	0.61	0.18	0.35	0.00	0.00	0.15	0.15
Sat Flow, veh/h				1619	1800	1530	1619	3510	0	0	6197	425
Grp Volume(v), veh/h				474	559	490	240	456	0	0	309	118
Grp Sat Flow(s),veh/h/ln				1619	1800	1530	1619	1710	0	0	1548	1725
Q Serve(g_s), s				19.2	20.9	21.9	17.1	11.9	0.0	0.0	7.2	7.4
Cycle Q Clear(g_c), s				19.2	20.9	21.9	17.1	11.9	0.0	0.0	7.2	7.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.25
Lane Grp Cap(c), veh/h				992	1103	938	296	1210	0	0	716	266
V/C Ratio(X)				0.48	0.51	0.52	0.81	0.38	0.00	0.00	0.43	0.44
Avail Cap(c_a), veh/h				992	1103	938	398	2109	0	0	1645	611
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.80	0.80	0.00	0.00	0.44	0.44
Uniform Delay (d), s/veh				12.7	13.0	13.2	47.0	28.9	0.0	0.0	46.0	46.1
Incr Delay (d2), s/veh				1.6	1.7	2.1	7.2	0.2	0.0	0.0	0.2	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.0	10.8	9.7	8.2	5.7	0.0	0.0	3.1	3.6
LnGrp Delay(d),s/veh				14.4	14.7	15.3	54.2	29.1	0.0	0.0	46.2	46.6
LnGrp LOS				B	B	B	D	C			D	D
Approach Vol, veh/h					1523			696			427	
Approach Delay, s/veh					14.8			37.7			46.3	
Approach LOS					B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		75.5		44.5			24.0	20.5
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		39.5		71.5			27.0	40.0
Max Q Clear Time (g_c+I1), s		23.9		13.9			19.1	9.4
Green Ext Time (p_c), s		6.6		7.0			0.4	6.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	106.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.16	2.43	2.53	2.62
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	1453	696	427
Effct. Green for Bike (s)	0.0	73.0	43.0	16.4
Cross Street Width (ft)	75.9	106.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	1217	717	273
Bicycle Delay (s/bike)	0.0	9.2	24.7	44.7
Bicycle Compliance		Good	Fair	Poor
Bicycle LOS Score	0.00	5.59	2.73	2.38
Bicycle LOS		F	B	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	467	890	0	0	386	205	204	2	85	0	0	0
Future Volume (veh/h)	467	890	0	0	386	205	204	2	85	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	502	957	0	0	415	220	248	0	61			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	559	1900	0	0	953	297	1331	0	629			
Arrive On Green	0.35	0.56	0.00	0.00	0.19	0.19	0.41	0.00	0.41			
Sat Flow, veh/h	1619	3510	0	0	5076	1530	3238	0	1530			
Grp Volume(v), veh/h	502	957	0	0	415	220	248	0	61			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1638	1530	1619	0	1530			
Q Serve(g_s), s	35.3	20.7	0.0	0.0	8.9	16.2	5.9	0.0	2.9			
Cycle Q Clear(g_c), s	35.3	20.7	0.0	0.0	8.9	16.2	5.9	0.0	2.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	559	1900	0	0	953	297	1331	0	629			
V/C Ratio(X)	0.90	0.50	0.00	0.00	0.44	0.74	0.19	0.00	0.10			
Avail Cap(c_a), veh/h	863	2565	0	0	983	306	1331	0	629			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.92	0.92	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.3	16.5	0.0	0.0	42.6	45.5	22.5	0.0	21.7			
Incr Delay (d2), s/veh	8.3	0.2	0.0	0.0	0.3	8.4	0.3	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	17.0	9.8	0.0	0.0	4.1	7.5	2.7	0.0	1.3			
LnGrp Delay(d),s/veh	45.6	16.7	0.0	0.0	42.9	53.9	22.8	0.0	22.0			
LnGrp LOS	D	B			D	D	C		C			
Approach Vol, veh/h		1459			635			309				
Approach Delay, s/veh		26.6			46.7			22.7				
Approach LOS		C			D			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		51.3		68.7			43.4	25.3
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		23.5		87.5			61.5	21.5
Max Q Clear Time (g_c+I1), s		7.9		22.7			37.3	18.2
Green Ext Time (p_c), s		0.9		15.8			1.6	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	31.4
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.81	2.65	2.06	2.09
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1459	635	312	0
Effct. Green for Bike (s)	69.2	19.3	46.8	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1153	322	780	0
Bicycle Delay (s/bike)	10.8	42.3	22.3	0.0
Bicycle Compliance	Fair	Poor	Fair	
Bicycle LOS Score	3.34	2.30	3.18	0.00
Bicycle LOS	C	B	C	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	125.4	73.1	103.0	63.0	96.6
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	7	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.82	2.81	2.59	2.34	2.86
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	865	882	326	340	551
Effct. Green for Bike (s)	49.0	46.9	20.5	20.5	16.0
Cross Street Width (ft)	96.6	63.0	73.1	125.4	103.0
Through Lanes Number	1	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	817	782	342	342	267
Bicycle Delay (s/bike)	21.0	22.3	41.3	41.3	45.1
Bicycle Compliance	Fair	Fair	Poor	Poor	Poor
Bicycle LOS Score	4.46	3.25	3.22	3.76	4.04
Bicycle LOS	E	C	C	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	863	181	68	601	29	71	161	53	40	180	41
Future Volume (veh/h)	63	863	181	68	601	29	71	161	53	40	180	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	72	992	208	78	691	33	82	185	61	46	207	47
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	294	1378	288	231	1626	78	547	1217	389	551	1328	295
Arrive On Green	0.98	0.98	0.98	0.49	0.49	0.49	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	700	2817	589	447	3323	159	1080	2550	816	1088	2782	619
Grp Volume(v), veh/h	72	602	598	78	355	369	82	122	124	46	126	128
Grp Sat Flow(s),veh/h/ln	700	1710	1696	447	1710	1772	1080	1710	1656	1088	1710	1691
Q Serve(g_s), s	5.2	3.1	3.1	15.7	16.1	16.1	5.4	4.8	5.1	2.9	5.0	5.2
Cycle Q Clear(g_c), s	23.8	3.1	3.1	28.5	16.1	16.1	8.6	4.8	5.1	6.0	5.0	5.2
Prop In Lane	1.00		0.35	1.00		0.09	1.00		0.49	1.00		0.37
Lane Grp Cap(c), veh/h	294	837	830	231	837	867	547	816	791	551	816	807
V/C Ratio(X)	0.25	0.72	0.72	0.34	0.42	0.43	0.15	0.15	0.16	0.08	0.15	0.16
Avail Cap(c_a), veh/h	435	1183	1173	322	1183	1226	547	816	791	551	816	807
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.41	0.41	0.41	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.8	0.7	0.7	27.7	19.8	19.8	19.6	17.6	17.7	18.9	17.7	17.7
Incr Delay (d2), s/veh	0.2	0.5	0.5	0.7	0.3	0.3	0.6	0.4	0.4	0.3	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.8	0.8	2.0	7.7	8.0	1.7	2.4	2.4	0.9	2.4	2.5
LnGrp Delay(d),s/veh	5.0	1.2	1.2	28.4	20.0	20.0	20.2	18.0	18.1	19.2	18.1	18.2
LnGrp LOS	A	A	A	C	C	C	C	B	B	B	B	B
Approach Vol, veh/h		1272			802			328			300	
Approach Delay, s/veh		1.4			20.8			18.6			18.3	
Approach LOS		A			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		59.9		60.1		59.9		60.1
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		30.5		80.5		30.5		80.5
Max Q Clear Time (g_c+I1), s		10.6		25.8		8.0		30.5
Green Ext Time (p_c), s		3.4		25.4		3.5		24.5

Intersection Summary	
HCM 2010 Ctrl Delay	11.2
HCM 2010 LOS	B

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.73	2.69	2.48	2.44
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1272	802	328	300
Effct. Green for Bike (s)	62.4	62.4	53.6	53.6
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1040	1040	893	893
Bicycle Delay (s/bike)	13.8	13.8	18.4	18.4
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	3.53	3.14	2.93	2.91
Bicycle LOS	D	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	591	182	153	394	93	156	537	121	126	616	136
Future Volume (veh/h)	124	591	182	153	394	93	156	537	121	126	616	136
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	146	695	214	180	464	109	184	632	142	148	725	160
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	202	906	405	229	962	430	239	1615	357	204	1532	334
Arrive On Green	0.12	0.26	0.26	0.28	0.56	0.56	0.15	0.40	0.40	0.13	0.38	0.38
Sat Flow, veh/h	1619	3420	1530	1619	3420	1530	1619	4028	891	1619	4039	882
Grp Volume(v), veh/h	146	695	214	180	464	109	184	512	262	148	587	298
Grp Sat Flow(s),veh/h/ln	1619	1710	1530	1619	1710	1530	1619	1638	1643	1619	1638	1644
Q Serve(g_s), s	10.4	22.5	14.3	12.3	9.8	4.4	13.1	13.3	13.6	10.5	16.2	16.5
Cycle Q Clear(g_c), s	10.4	22.5	14.3	12.3	9.8	4.4	13.1	13.3	13.6	10.5	16.2	16.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.54	1.00		0.54
Lane Grp Cap(c), veh/h	202	906	405	229	962	430	239	1314	659	204	1243	624
V/C Ratio(X)	0.72	0.77	0.53	0.79	0.48	0.25	0.77	0.39	0.40	0.72	0.47	0.48
Avail Cap(c_a), veh/h	290	983	440	290	983	440	290	1314	659	290	1243	624
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.70	0.74	0.74	0.74	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	40.7	37.7	41.4	21.0	19.8	49.2	25.5	25.6	50.4	28.2	28.2
Incr Delay (d2), s/veh	3.5	2.4	0.7	8.0	0.3	0.2	9.7	0.9	1.8	5.2	1.3	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	10.9	6.2	6.0	4.5	1.9	6.5	6.2	6.5	5.0	7.6	7.9
LnGrp Delay(d),s/veh	54.0	43.1	38.4	49.4	21.3	20.0	58.9	26.4	27.4	55.6	29.4	30.9
LnGrp LOS	D	D	D	D	C	C	E	C	C	E	C	C
Approach Vol, veh/h		1055			753			958			1033	
Approach Delay, s/veh		43.7			27.8			32.9			33.6	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	50.1	19.0	33.8	19.7	47.5	17.0	35.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	32.0	19.0	32.0	19.0	32.0	19.0	32.0
Max Q Clear Time (g_c+I1), s	12.5	15.6	14.3	24.5	15.1	18.5	12.4	11.8
Green Ext Time (p_c), s	0.2	9.8	0.2	4.8	0.2	8.6	0.2	9.2

Intersection Summary	
HCM 2010 Ctrl Delay	35.1
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.78	2.76	2.90	2.88
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1055	753	958	1033
Effct. Green for Bike (s)	32.4	33.8	42.3	40.9
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	540	563	705	682
Bicycle Delay (s/bike)	32.0	31.0	25.2	26.1
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.73	3.48	3.19	3.23
Bicycle LOS	D	C	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	218	794	618	100	63	156
Future Volume (veh/h)	218	794	618	100	63	156
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1600	1800
Adj Flow Rate, veh/h	256	934	727	118	74	184
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	388	1712	1189	532	710	1427
Arrive On Green	0.14	0.50	0.35	0.35	0.47	0.47
Sat Flow, veh/h	1619	3510	3510	1530	1524	3060
Grp Volume(v), veh/h	256	934	727	118	74	184
Grp Sat Flow(s),veh/h/ln	1619	1710	1710	1530	1524	1530
Q Serve(g_s), s	11.3	22.5	21.1	6.5	3.3	4.1
Cycle Q Clear(g_c), s	11.3	22.5	21.1	6.5	3.3	4.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	388	1712	1189	532	710	1427
V/C Ratio(X)	0.66	0.55	0.61	0.22	0.10	0.13
Avail Cap(c_a), veh/h	558	2565	1682	752	710	1427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.61	0.61	0.90	0.90	1.00	1.00
Uniform Delay (d), s/veh	21.6	20.6	32.4	27.7	18.0	18.2
Incr Delay (d2), s/veh	1.2	0.2	0.5	0.2	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	10.7	10.1	2.8	1.4	4.7
LnGrp Delay(d),s/veh	22.7	20.8	32.9	27.9	18.3	18.4
LnGrp LOS	C	C	C	C	B	B
Approach Vol, veh/h		1190	845		258	
Approach Delay, s/veh		21.2	32.2		18.3	
Approach LOS		C	C		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				62.1		57.9	18.3	43.7
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				87.5		23.5	26.5	56.5
Max Q Clear Time (g_c+I1), s				24.5		6.1	13.3	23.1
Green Ext Time (p_c), s				20.0		0.8	0.6	16.1

Intersection Summary	
HCM 2010 Ctrl Delay	24.9
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.73	2.60	2.44
Pedestrian Crosswalk LOS	B	B	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	1190	845	258
Effct. Green for Bike (s)	61.6	36.9	54.4
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	1027	615	907
Bicycle Delay (s/bike)	14.2	28.8	17.9
Bicycle Compliance	Fair	Fair	Fair
Bicycle LOS Score	3.46	3.19	2.69
Bicycle LOS	C	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	78	219	21	18	2	259	772	112	15	1008	268
Future Volume (veh/h)	144	78	219	21	18	2	259	772	112	15	1008	268
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	126	141	249	24	20	2	294	877	127	17	1145	305
Adj No. of Lanes	1	1	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	284	315	515	80	169	76	262	2946	425	59	1893	1115
Arrive On Green	0.18	0.18	0.18	0.05	0.05	0.05	0.16	0.68	0.68	0.04	0.55	0.55
Sat Flow, veh/h	1619	1800	1530	1619	3420	1530	1619	4340	626	1619	3420	1530
Grp Volume(v), veh/h	126	141	249	24	20	2	294	661	343	17	1145	305
Grp Sat Flow(s),veh/h/ln	1619	1800	1530	1619	1710	1530	1619	1638	1690	1619	1710	1530
Q Serve(g_s), s	9.3	9.3	17.1	1.9	0.7	0.2	21.5	10.8	10.9	1.4	29.9	9.0
Cycle Q Clear(g_c), s	9.3	9.3	17.1	1.9	0.7	0.2	21.5	10.8	10.9	1.4	29.9	9.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	284	315	515	80	169	76	262	2224	1147	59	1893	1115
V/C Ratio(X)	0.44	0.45	0.48	0.30	0.12	0.03	1.12	0.30	0.30	0.29	0.60	0.27
Avail Cap(c_a), veh/h	420	467	644	420	887	397	262	2224	1147	262	1893	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.1	49.1	34.9	61.0	60.4	60.2	55.8	8.6	8.6	62.4	19.9	6.1
Incr Delay (d2), s/veh	1.0	0.9	0.6	2.1	0.3	0.1	92.9	0.3	0.7	2.7	1.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	4.7	7.3	0.9	0.4	0.1	16.4	5.0	5.3	0.7	14.4	6.4
LnGrp Delay(d),s/veh	50.0	50.0	35.5	63.0	60.7	60.3	148.7	8.9	9.3	65.1	21.4	6.7
LnGrp LOS	D	D	D	E	E	E	F	A	A	E	C	A
Approach Vol, veh/h		516			46			1298			1467	
Approach Delay, s/veh		43.0			61.9			40.7			18.8	
Approach LOS		D			E			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	92.3		25.3	23.5	75.6		8.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	19.0	32.0		32.0	19.0	32.0		32.0
Max Q Clear Time (g_c+I1), s	3.4	12.9		19.1	23.5	31.9		3.9
Green Ext Time (p_c), s	0.0	14.8		1.7	0.0	0.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	31.7
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	66.5	66.5	66.5	66.5
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.54	2.38	2.92	2.97
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	502	46	1298	1467
Effct. Green for Bike (s)	19.7	10.0	96.2	60.6
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	296	150	1447	911
Bicycle Delay (s/bike)	48.3	56.9	5.1	19.7
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	3.50	2.90	3.19	3.70
Bicycle LOS	D	C	C	D

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	10	0	260	20	1	192
Future Vol, veh/h	10	0	260	20	1	192
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	0	274	21	1	202

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	387	147	0	0	295	0
Stage 1	284	-	-	-	-	-
Stage 2	103	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	594	880	-	-	1278	-
Stage 1	745	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	593	880	-	-	1278	-
Mov Cap-2 Maneuver	636	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	915	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	636	1278	-
HCM Lane V/C Ratio	-	-	0.017	0.001	-
HCM Control Delay (s)	-	-	10.8	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	59.6
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	452
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.91
Prob of Blocked Lane	0.45
Delay for adq Gap	65.61
Avg Ped Delay (s)	59.57

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	59.6
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	452
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.91
Prob of Blocked Lane	0.45
Delay for adq Gap	65.61
Avg Ped Delay (s)	59.57

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	5	0	280	10	0	202
Future Vol, veh/h	5	0	280	10	0	202
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	0	295	11	0	213

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	406	153	0	0	305	0
Stage 1	300	-	-	-	-	-
Stage 2	106	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	578	872	-	-	1267	-
Stage 1	731	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	578	872	-	-	1267	-
Mov Cap-2 Maneuver	623	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	913	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	623	1267	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s)	-	-	10.8	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	72
Level of Service	F

Crosswalk	
Length (ft)	57
Lanes Crossed	4
Veh Vol Crossed	482
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.29
Prob of Delayed X-ing	0.92
Prob of Blocked Lane	0.48
Delay for adq Gap	77.92
Avg Ped Delay (s)	72.02

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	68.6
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	482
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.92
Prob of Blocked Lane	0.47
Delay for adq Gap	74.45
Avg Ped Delay (s)	68.60

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	14	0	290	29	0	206
Future Vol, veh/h	14	0	290	29	0	206
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	15	0	305	31	0	217

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	429	168	0	0	336	0
Stage 1	321	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	559	853	-	-	1235	-
Stage 1	714	-	-	-	-	-
Stage 2	910	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	559	853	-	-	1235	-
Mov Cap-2 Maneuver	608	-	-	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	910	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	608	1235	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	-	-	11.1	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	129.9
Level of Service	F

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	496
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	0.95
Prob of Blocked Lane	0.54
Delay for adq Gap	136.04
Avg Ped Delay (s)	129.85

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	213.2
Level of Service	F

Crosswalk	
Length (ft)	79
Lanes Crossed	4
Veh Vol Crossed	496
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	25.57
Prob of Delayed X-ing	0.97
Prob of Blocked Lane	0.59
Delay for adq Gap	219.64
Avg Ped Delay (s)	213.16

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	318	282	0	0	24	0	353	264	194	485	0
Future Volume (vph)	160	318	282	0	0	24	0	353	264	194	485	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0			1.5			2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91			1.00			0.91		0.97	0.95	
Frt	1.00	0.93			0.85			0.94		1.00	1.00	
Flt Protected	0.95	1.00			1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1470	3047			0			4598		2949	3420	
Flt Permitted	0.95	1.00			1.00			1.00		0.95	1.00	
Satd. Flow (perm)	1470	3047			0			4598		2949	3420	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	186	370	328	0	0	28	0	410	307	226	564	0
RTOR Reduction (vph)	0	78	0	0	28	0	0	138	0	0	0	0
Lane Group Flow (vph)	167	639	0	0	0	0	0	579	0	226	564	0
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6											
Actuated Green, G (s)	69.8	69.8			0.0			22.2		14.5	41.2	
Effective Green, g (s)	72.3	72.3			0.0			24.7		17.0	43.7	
Actuated g/C Ratio	0.60	0.60			0.00			0.21		0.14	0.36	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	885	1835			0			946		417	1245	
v/s Ratio Prot								c0.13		c0.08	0.16	
v/s Ratio Perm	0.11	0.21										
v/c Ratio	0.19	0.35			0.00			0.61		0.54	0.45	
Uniform Delay, d1	10.7	12.0			60.0			43.3		47.9	29.0	
Progression Factor	1.00	1.00			1.00			1.00		1.32	0.91	
Incremental Delay, d2	0.5	0.5			0.0			1.2		1.4	0.3	
Delay (s)	11.2	12.5			60.0			44.5		64.4	26.8	
Level of Service	B	B			E			D		E	C	
Approach Delay (s)		12.3			60.0			44.5			37.6	
Approach LOS		B			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	379	280	503	192	365	0	0	318	23
Future Volume (vph)	0	0	0	379	280	503	192	365	0	0	318	23
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.95	0.85	1.00	1.00			0.99	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1615	1628	1454	1615	3420			6129	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1615	1628	1454	1615	3420			6129	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	0	0	0	474	350	629	240	456	0	0	398	29
RTOR Reduction (vph)	0	0	0	0	9	165	0	0	0	0	12	0
Lane Group Flow (vph)	0	0	0	474	505	300	240	456	0	0	415	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				70.4	70.4	70.4	22.2	40.6			13.9	
Effective Green, g (s)				72.9	72.9	72.9	24.7	43.1			16.4	
Actuated g/C Ratio				0.61	0.61	0.61	0.21	0.36			0.14	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				981	989	883	332	1228			837	
v/s Ratio Prot					c0.31		c0.15	0.13			c0.07	
v/s Ratio Perm				0.29		0.21						
v/c Ratio				0.48	0.51	0.34	0.72	0.37			0.50	
Uniform Delay, d1				13.1	13.4	11.6	44.5	28.4			48.0	
Progression Factor				1.00	1.00	1.00	1.55	0.81			0.56	
Incremental Delay, d2				1.7	1.9	1.0	7.3	0.2			0.4	
Delay (s)				14.8	15.3	12.7	76.4	23.1			27.1	
Level of Service				B	B	B	E	C			C	
Approach Delay (s)		0.0			14.3			41.5			27.1	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	467	890	0	0	386	205	204	2	85	0	0	0
Future Volume (vph)	467	890	0	0	386	205	204	2	85	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4914	1530	1534	1549	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4914	1530	1534	1549	1454			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	502	957	0	0	415	220	219	2	91	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	185	0	2	50	0	0	0
Lane Group Flow (vph)	502	957	0	0	415	35	116	112	32	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	45.4	66.7			16.8	16.8	44.3	44.3	44.3			
Effective Green, g (s)	47.9	69.2			19.3	19.3	46.8	46.8	46.8			
Actuated g/C Ratio	0.40	0.58			0.16	0.16	0.39	0.39	0.39			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	644	1972			790	246	598	604	567			
v/s Ratio Prot	c0.31	c0.28			0.08							
v/s Ratio Perm						0.02	c0.08	0.07	0.02			
v/c Ratio	0.78	0.49			0.53	0.14	0.19	0.19	0.06			
Uniform Delay, d1	31.4	14.9			46.2	43.3	24.2	24.1	22.8			
Progression Factor	1.00	1.00			0.73	2.87	1.00	1.00	1.00			
Incremental Delay, d2	5.9	0.2			0.6	0.3	0.7	0.7	0.2			
Delay (s)	37.4	15.1			34.3	124.5	24.9	24.7	23.0			
Level of Service	D	B			C	F	C	C	C			
Approach Delay (s)		22.8			65.6			24.3			0.0	
Approach LOS		C			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	34.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: Inland Center Drive & S E Street & W Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	103	615	61	63	251	465	14	12	52	159	70	39
Future Volume (vph)	103	615	61	63	251	465	14	12	52	159	70	39
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800	1800	1800	1600	1800	1800	1700
Total Lost time (s)	2.0	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	1.00	1.00		0.97	0.95			0.97	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	1615	1800	1530		2949	3405			2949	1800	1530	1615
Flt Permitted	0.95	1.00	1.00		0.95	1.00			0.95	1.00	1.00	0.95
Satd. Flow (perm)	1615	1800	1530		2949	3405			2949	1800	1530	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	114	683	68	70	279	517	16	13	58	177	78	43
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	54	0
Lane Group Flow (vph)	114	683	68	0	349	533	0	0	71	177	24	43
Turn Type	Prot	NA	Prot	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot
Protected Phases	7	4	4	3	3	8		5	5	2	3	1
Permitted Phases											2	
Actuated Green, G (s)	14.1	48.5	48.5		13.5	47.9			5.0	18.0	31.5	5.0
Effective Green, g (s)	16.6	51.0	51.0		16.0	50.4			7.5	20.5	36.5	7.5
Actuated g/C Ratio	0.14	0.42	0.42		0.13	0.42			0.06	0.17	0.30	0.06
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5			4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	223	765	650		393	1430			184	307	490	100
v/s Ratio Prot	0.07	c0.38	0.04		c0.12	0.16			0.02	c0.10	0.01	c0.03
v/s Ratio Perm											0.01	
v/c Ratio	0.51	0.89	0.10		0.89	0.37			0.39	0.58	0.05	0.43
Uniform Delay, d1	47.9	32.0	20.8		51.1	23.9			54.0	45.8	29.5	54.2
Progression Factor	0.77	1.22	1.02		0.79	1.60			1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	14.4	0.3		24.0	0.7			6.0	7.7	0.2	12.9
Delay (s)	44.7	53.3	21.5		64.6	39.0			60.1	53.4	29.7	67.1
Level of Service	D	D	C		E	D			E	D	C	E
Approach Delay (s)		49.7				49.1				49.2		
Approach LOS		D				D				D		

Intersection Summary			
HCM 2000 Control Delay	53.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations							
Traffic Volume (vph)	171	61	35	4	110	336	47
Future Volume (vph)	171	61	35	4	110	336	47
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1800	1800
Total Lost time (s)	2.0			2.0	2.0	2.0	
Lane Util. Factor	0.95			1.00	1.00	0.88	
Frt	0.95			1.00	1.00	0.85	
Flt Protected	1.00			0.95	0.95	1.00	
Satd. Flow (prot)	3235			1520	1520	2693	
Flt Permitted	1.00			0.95	0.95	1.00	
Satd. Flow (perm)	3235			1520	1520	2693	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	190	68	39	4	122	373	52
RTOR Reduction (vph)	10	0	0	0	0	119	0
Lane Group Flow (vph)	287	0	0	4	122	306	0
Turn Type	NA			Prot	Prot	Perm	
Protected Phases	6			9	9		
Permitted Phases						9	
Actuated Green, G (s)	18.0			12.5	12.5	12.5	
Effective Green, g (s)	20.5			15.0	15.0	15.0	
Actuated g/C Ratio	0.17			0.12	0.12	0.12	
Clearance Time (s)	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	552			190	190	336	
v/s Ratio Prot	0.09			0.00	0.08		
v/s Ratio Perm						c0.11	
v/c Ratio	0.52			0.02	0.64	0.91	
Uniform Delay, d1	45.3			46.1	49.9	51.8	
Progression Factor	1.00			0.94	0.92	0.89	
Incremental Delay, d2	3.5			0.2	14.8	29.8	
Delay (s)	48.7			43.6	60.7	75.8	
Level of Service	D			D	E	E	
Approach Delay (s)	51.1				72.2		
Approach LOS	D				E		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	863	181	68	601	29	71	161	53	40	180	41
Future Volume (vph)	63	863	181	68	601	29	71	161	53	40	180	41
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3331		1615	3397		1615	3293		1615	3325	
Flt Permitted	0.30	1.00		0.13	1.00		0.56	1.00		0.56	1.00	
Satd. Flow (perm)	502	3331		213	3397		948	3293		959	3325	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	72	992	208	78	691	33	82	185	61	46	207	47
RTOR Reduction (vph)	0	23	0	0	4	0	0	20	0	0	12	0
Lane Group Flow (vph)	72	1177	0	78	720	0	82	226	0	46	242	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	59.9	59.9		59.9	59.9		51.1	51.1		51.1	51.1	
Effective Green, g (s)	62.4	62.4		62.4	62.4		53.6	53.6		53.6	53.6	
Actuated g/C Ratio	0.52	0.52		0.52	0.52		0.45	0.45		0.45	0.45	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	261	1732		110	1766		423	1470		428	1485	
v/s Ratio Prot		0.35			0.21			0.07			0.07	
v/s Ratio Perm	0.14			c0.37			c0.09			0.05		
v/c Ratio	0.28	0.68		0.71	0.41		0.19	0.15		0.11	0.16	
Uniform Delay, d1	16.1	21.4		21.9	17.5		20.1	19.7		19.3	19.8	
Progression Factor	0.32	0.36		1.01	0.84		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.6		16.6	0.1		1.0	0.2		0.5	0.2	
Delay (s)	5.5	8.3		38.6	14.9		21.1	19.9		19.8	20.0	
Level of Service	A	A		D	B		C	B		B	C	
Approach Delay (s)		8.1			17.2			20.2			20.0	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	591	182	153	394	93	156	537	121	126	616	136
Future Volume (vph)	124	591	182	153	394	93	156	537	121	126	616	136
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3420	1530	1615	3420	1530	1615	4779		1615	4781	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1615	3420	1530	1615	3420	1530	1615	4779		1615	4781	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	146	695	214	180	464	109	184	632	142	148	725	160
RTOR Reduction (vph)	0	0	156	0	0	68	0	27	0	0	27	0
Lane Group Flow (vph)	146	695	58	180	464	41	184	747	0	148	858	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	15.4	29.9	29.9	16.8	31.3	31.3	16.9	39.8		15.5	38.4	
Effective Green, g (s)	17.9	32.4	32.4	19.3	33.8	33.8	19.4	42.3		18.0	40.9	
Actuated g/C Ratio	0.15	0.27	0.27	0.16	0.28	0.28	0.16	0.35		0.15	0.34	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	240	923	413	259	963	430	261	1684		242	1629	
v/s Ratio Prot	0.09	c0.20		c0.11	0.14		c0.11	0.16		0.09	c0.18	
v/s Ratio Perm			0.04			0.03						
v/c Ratio	0.61	0.75	0.14	0.69	0.48	0.09	0.70	0.44		0.61	0.53	
Uniform Delay, d1	47.8	40.1	33.2	47.6	35.8	31.8	47.6	29.8		47.7	31.8	
Progression Factor	0.68	1.26	4.41	0.82	1.54	3.66	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.9	3.1	0.1	7.4	0.4	0.1	8.4	0.8		4.5	1.2	
Delay (s)	36.3	53.8	146.7	46.4	55.6	116.5	56.0	30.7		52.2	33.0	
Level of Service	D	D	F	D	E	F	E	C		D	C	
Approach Delay (s)		70.2			62.2			35.5			35.8	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	218	794	618	100	63	156
Future Volume (vph)	218	794	618	100	63	156
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.92	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.98	1.00
Satd. Flow (prot)	1615	3420	3420	1530	2784	1392
Flt Permitted	0.16	1.00	1.00	1.00	0.98	1.00
Satd. Flow (perm)	272	3420	3420	1530	2784	1392
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	256	934	727	118	74	184
RTOR Reduction (vph)	0	0	0	82	50	50
Lane Group Flow (vph)	256	934	727	36	116	42
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	59.1	59.1	34.5	34.5	51.9	51.9
Effective Green, g (s)	61.6	61.6	37.0	37.0	54.4	54.4
Actuated g/C Ratio	0.51	0.51	0.31	0.31	0.45	0.45
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	392	1755	1054	471	1262	631
v/s Ratio Prot	c0.12	0.27	c0.21		c0.04	
v/s Ratio Perm	0.21			0.02		0.03
v/c Ratio	0.65	0.53	0.69	0.08	0.09	0.07
Uniform Delay, d1	20.4	19.6	36.5	29.4	18.7	18.5
Progression Factor	1.04	1.32	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.3	1.9	0.1	0.1	0.2
Delay (s)	24.6	26.0	38.4	29.5	18.9	18.7
Level of Service	C	C	D	C	B	B
Approach Delay (s)		25.7	37.1		18.8	
Approach LOS		C	D		B	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	78	219	21	18	2	259	772	112	15	1008	268
Future Volume (vph)	144	78	219	21	18	2	259	772	112	15	1008	268
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1534	1684	1530	1615	3420	1530	1615	4821		1615	3420	1530
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1534	1684	1530	1615	3420	1530	1615	4821		1615	3420	1530
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	164	89	249	24	20	2	294	877	127	17	1145	305
RTOR Reduction (vph)	0	0	139	0	0	2	0	6	0	0	0	114
Lane Group Flow (vph)	125	128	110	24	20	0	294	998	0	17	1145	191
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	17.2	17.2	53.5	5.2	5.2	5.2	36.3	89.2		3.4	56.3	73.5
Effective Green, g (s)	19.7	19.7	58.5	7.7	7.7	7.7	38.8	91.7		5.9	58.8	78.5
Actuated g/C Ratio	0.15	0.15	0.44	0.06	0.06	0.06	0.29	0.69		0.04	0.44	0.59
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	227	249	672	93	198	88	471	3323		71	1512	926
v/s Ratio Prot	c0.08	0.08	0.05	c0.01	0.01		c0.18	0.21		0.01	c0.33	0.03
v/s Ratio Perm			0.02			0.00						0.09
v/c Ratio	0.55	0.51	0.16	0.26	0.10	0.00	0.62	0.30		0.24	0.76	0.21
Uniform Delay, d1	52.5	52.2	22.5	59.9	59.4	59.0	40.8	8.1		61.4	31.1	12.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.9	1.8	0.1	1.5	0.2	0.0	2.6	0.2		1.7	3.6	0.1
Delay (s)	55.4	54.0	22.6	61.4	59.6	59.0	43.4	8.3		63.1	34.7	12.8
Level of Service	E	D	C	E	E	E	D	A		E	C	B
Approach Delay (s)		38.8			60.5			16.3			30.5	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	133.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	348	306	0	0	12	1	460	251	463	567	0
Future Volume (veh/h)	227	348	306	0	0	12	1	460	251	463	567	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800				1800	1800	1800	1600	1800	1800
Adj Flow Rate, veh/h	244	374	329				1	495	270	498	610	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	750	834	709				30	922	390	610	1722	0
Arrive On Green	0.46	0.46	0.46				0.28	0.28	0.28	0.21	0.50	0.00
Sat Flow, veh/h	1619	1800	1530				1	3288	1392	2956	3510	0
Grp Volume(v), veh/h	244	374	329				271	225	270	498	610	0
Grp Sat Flow(s),veh/h/ln	1619	1800	1530				1798	1491	1392	1478	1710	0
Q Serve(g_s), s	11.4	16.9	17.6				0.0	15.3	20.8	19.3	12.9	0.0
Cycle Q Clear(g_c), s	11.4	16.9	17.6				15.3	15.3	20.8	19.3	12.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	750	834	709				534	418	390	610	1722	0
V/C Ratio(X)	0.33	0.45	0.46				0.51	0.54	0.69	0.82	0.35	0.00
Avail Cap(c_a), veh/h	750	834	709				667	528	493	727	2109	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	1.00	0.80	0.80	0.00
Uniform Delay (d), s/veh	20.4	21.8	22.0				36.6	36.6	38.5	45.5	18.0	0.0
Incr Delay (d2), s/veh	1.2	1.7	2.2				0.7	1.1	2.9	5.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	8.8	7.8				7.7	6.4	8.3	8.3	6.1	0.0
LnGrp Delay(d),s/veh	21.5	23.6	24.2				37.3	37.7	41.5	50.5	18.1	0.0
LnGrp LOS	C	C	C				D	D	D	D	B	
Approach Vol, veh/h		947						766			1108	
Approach Delay, s/veh		23.3						38.9			32.7	
Approach LOS		C						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			26.8	35.7		57.6		62.4
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			21.3	22.8		19.6		14.9
Green Ext Time (p_c), s			1.0	8.4		5.2		12.5

Intersection Summary	
HCM 2010 Ctrl Delay	31.2
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.38	2.30	2.65	2.78
Pedestrian Crosswalk LOS	B	B	B	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	947	13	766	1108
Effct. Green for Bike (s)	59.3	0.0	28.0	56.7
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	988	0	467	945
Bicycle Delay (s/bike)	15.4	0.0	35.3	16.7
Bicycle Compliance	Fair		Poor	Fair
Bicycle LOS Score	3.73	0.00	2.43	3.34
Bicycle LOS	D		B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	287	307	367	229	470	0	0	736	202
Future Volume (veh/h)	0	0	0	287	307	367	229	470	0	0	736	202
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1700	1800	1800	1700	1800	0	0	1800	1800
Adj Flow Rate, veh/h				293	359	344	234	480	0	0	751	206
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				825	917	779	291	1564	0	0	1282	341
Arrive On Green				0.51	0.51	0.51	0.18	0.46	0.00	0.00	0.26	0.26
Sat Flow, veh/h				1619	1800	1530	1619	3510	0	0	5161	1305
Grp Volume(v), veh/h				293	359	344	234	480	0	0	709	248
Grp Sat Flow(s),veh/h/ln				1619	1800	1530	1619	1710	0	0	1548	1570
Q Serve(g_s), s				13.0	14.7	17.1	16.6	10.6	0.0	0.0	16.0	16.6
Cycle Q Clear(g_c), s				13.0	14.7	17.1	16.6	10.6	0.0	0.0	16.0	16.6
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.83
Lane Grp Cap(c), veh/h				825	917	779	291	1564	0	0	1213	410
V/C Ratio(X)				0.36	0.39	0.44	0.81	0.31	0.00	0.00	0.58	0.60
Avail Cap(c_a), veh/h				825	917	779	398	2109	0	0	1645	556
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.77	0.77	0.00	0.00	0.25	0.25
Uniform Delay (d), s/veh				17.6	18.0	18.6	47.2	20.6	0.0	0.0	38.7	38.9
Incr Delay (d2), s/veh				1.2	1.3	1.8	6.5	0.1	0.0	0.0	0.1	0.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.1	7.6	7.6	7.9	5.0	0.0	0.0	6.8	7.3
LnGrp Delay(d),s/veh				18.8	19.3	20.4	53.7	20.6	0.0	0.0	38.8	39.3
LnGrp LOS				B	B	C	D	C			D	D
Approach Vol, veh/h					996			714			957	
Approach Delay, s/veh					19.6			31.5			38.9	
Approach LOS					B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		63.1		56.9			23.5	33.3
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		39.5		71.5			27.0	40.0
Max Q Clear Time (g_c+I1), s		19.1		12.6			18.6	18.6
Green Ext Time (p_c), s		4.3		14.2			0.4	10.2

Intersection Summary	
HCM 2010 Ctrl Delay	29.7
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	106.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.21	2.28	2.58	2.67
Pedestrian Crosswalk LOS	B	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	980	714	957
Effct. Green for Bike (s)	0.0	60.2	55.8	29.5
Cross Street Width (ft)	75.9	106.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	1003	930	492
Bicycle Delay (s/bike)	0.0	14.9	17.2	34.1
Bicycle Compliance		Fair	Fair	Poor
Bicycle LOS Score	0.00	4.81	2.75	2.60
Bicycle LOS		E	B	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	560	806	0	0	623	536	253	5	80	0	0	0
Future Volume (veh/h)	560	806	0	0	623	536	253	5	80	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	596	857	0	0	663	570	297	0	58			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	648	2394	0	0	1392	434	863	0	408			
Arrive On Green	0.40	0.70	0.00	0.00	0.28	0.28	0.27	0.00	0.27			
Sat Flow, veh/h	1619	3510	0	0	5076	1530	3238	0	1530			
Grp Volume(v), veh/h	596	857	0	0	663	570	297	0	58			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1638	1530	1619	0	1530			
Q Serve(g_s), s	41.9	12.0	0.0	0.0	13.4	34.0	8.9	0.0	3.5			
Cycle Q Clear(g_c), s	41.9	12.0	0.0	0.0	13.4	34.0	8.9	0.0	3.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	648	2394	0	0	1392	434	863	0	408			
V/C Ratio(X)	0.92	0.36	0.00	0.00	0.48	1.31	0.34	0.00	0.14			
Avail Cap(c_a), veh/h	769	2651	0	0	1392	434	863	0	408			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.74	0.74	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.2	7.2	0.0	0.0	35.6	43.0	35.5	0.0	33.5			
Incr Delay (d2), s/veh	14.7	0.1	0.0	0.0	0.2	153.5	1.1	0.0	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	21.4	5.6	0.0	0.0	6.1	32.8	4.1	0.0	1.5			
LnGrp Delay(d),s/veh	48.9	7.3	0.0	0.0	35.8	196.5	36.6	0.0	34.3			
LnGrp LOS	D	A			D	F	D		C			
Approach Vol, veh/h		1453			1233			355				
Approach Delay, s/veh		24.3			110.1			36.2				
Approach LOS		C			F			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		34.0		86.0			50.0	36.0
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		20.5		90.5			54.5	31.5
Max Q Clear Time (g_c+I1), s		10.9		14.0			43.9	36.0
Green Ext Time (p_c), s		0.9		23.4			1.6	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	60.5
HCM 2010 LOS	E

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.86	2.75	2.08	2.31
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1453	1233	359	0
Effct. Green for Bike (s)	82.9	29.6	33.1	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1382	493	552	0
Bicycle Delay (s/bike)	5.7	34.1	31.5	0.0
Bicycle Compliance	Good	Poor	Poor	
Bicycle LOS Score	3.34	2.63	3.26	0.00
Bicycle LOS	C	B	C	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	125.4	73.1	103.0	63.0	96.6
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	7	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.86	2.85	2.68	2.39	2.88
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	714	1239	725	417	600
Effct. Green for Bike (s)	39.9	46.3	27.2	20.5	13.4
Cross Street Width (ft)	96.6	63.0	73.1	125.4	103.0
Through Lanes Number	1	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	665	772	453	342	223
Bicycle Delay (s/bike)	26.7	22.6	35.9	41.3	47.3
Bicycle Compliance	Fair	Fair	Poor	Poor	Poor
Bicycle LOS Score	4.22	3.55	3.87	3.82	4.13
Bicycle LOS	D	D	D	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	792	118	78	938	41	152	283	75	38	282	70
Future Volume (veh/h)	67	792	118	78	938	41	152	283	75	38	282	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	73	861	128	85	1020	45	165	308	82	41	307	76
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	222	1573	234	204	1757	78	413	1181	309	409	1200	293
Arrive On Green	0.17	0.17	0.17	0.53	0.53	0.53	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	508	2987	444	546	3337	147	960	2683	703	953	2728	665
Grp Volume(v), veh/h	73	493	496	85	523	542	165	195	195	41	191	192
Grp Sat Flow(s),veh/h/ln	508	1710	1722	546	1710	1774	960	1710	1676	953	1710	1683
Q Serve(g_s), s	16.2	31.6	31.6	16.3	25.0	25.0	15.8	8.6	8.9	3.4	8.4	8.7
Cycle Q Clear(g_c), s	41.2	31.6	31.6	47.9	25.0	25.0	24.4	8.6	8.9	12.3	8.4	8.7
Prop In Lane	1.00		0.26	1.00		0.08	1.00		0.42	1.00		0.40
Lane Grp Cap(c), veh/h	222	901	907	204	901	934	413	752	737	409	752	740
V/C Ratio(X)	0.33	0.55	0.55	0.42	0.58	0.58	0.40	0.26	0.27	0.10	0.25	0.26
Avail Cap(c_a), veh/h	234	941	947	217	941	976	413	752	737	409	752	740
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.46	0.46	0.46	0.59	0.59	0.59	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	36.5	36.5	38.5	19.4	19.4	29.0	21.2	21.3	25.2	21.2	21.2
Incr Delay (d2), s/veh	0.4	0.3	0.3	0.8	0.5	0.5	2.9	0.8	0.9	0.5	0.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	15.1	15.2	2.5	11.9	12.3	4.5	4.2	4.3	1.0	4.1	4.2
LnGrp Delay(d),s/veh	52.6	36.8	36.8	39.3	19.9	19.8	31.8	22.1	22.2	25.7	22.0	22.1
LnGrp LOS	D	D	D	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1062			1150			555			424	
Approach Delay, s/veh		37.9			21.3			25.0			22.4	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		54.8		65.2		54.8		65.2
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		47.5		63.5		47.5		63.5
Max Q Clear Time (g_c+I1), s		26.4		43.2		14.3		49.9
Green Ext Time (p_c), s		5.8		14.9		6.5		10.8

Intersection Summary	
HCM 2010 Ctrl Delay	27.6
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.77	2.74	2.53	2.49
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1062	1150	555	424
Effct. Green for Bike (s)	52.9	52.9	63.1	63.1
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	882	882	1052	1052
Bicycle Delay (s/bike)	18.8	18.8	13.5	13.5
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	3.35	3.43	3.12	3.01
Bicycle LOS	C	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	503	203	179	637	124	183	723	110	136	758	126
Future Volume (veh/h)	184	503	203	179	637	124	183	723	110	136	758	126
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	196	535	216	190	678	132	195	769	117	145	806	134
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	251	908	406	243	891	399	250	1696	256	201	1545	255
Arrive On Green	0.15	0.27	0.27	0.20	0.35	0.35	0.15	0.39	0.39	0.12	0.36	0.36
Sat Flow, veh/h	1619	3420	1530	1619	3420	1530	1619	4310	651	1619	4250	702
Grp Volume(v), veh/h	196	535	216	190	678	132	195	583	303	145	620	320
Grp Sat Flow(s),veh/h/ln	1619	1710	1530	1619	1710	1530	1619	1638	1685	1619	1638	1676
Q Serve(g_s), s	14.0	16.3	14.5	13.4	21.1	7.6	13.9	15.8	16.0	10.3	17.8	18.0
Cycle Q Clear(g_c), s	14.0	16.3	14.5	13.4	21.1	7.6	13.9	15.8	16.0	10.3	17.8	18.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		0.42
Lane Grp Cap(c), veh/h	251	908	406	243	891	399	250	1289	663	201	1191	609
V/C Ratio(X)	0.78	0.59	0.53	0.78	0.76	0.33	0.78	0.45	0.46	0.72	0.52	0.53
Avail Cap(c_a), veh/h	290	983	440	290	983	440	290	1289	663	290	1191	609
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.72	0.72	0.72	0.72	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	38.4	37.7	46.2	35.9	31.5	48.8	26.9	26.9	50.5	30.0	30.0
Incr Delay (d2), s/veh	8.4	0.6	0.8	8.1	2.3	0.3	11.2	1.1	2.3	4.8	1.6	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	7.8	6.2	6.5	10.2	3.3	7.0	7.3	7.8	4.9	8.4	8.9
LnGrp Delay(d),s/veh	57.2	38.9	38.5	54.3	38.2	31.8	60.0	28.0	29.2	55.3	31.6	33.3
LnGrp LOS	E	D	D	D	D	C	E	C	C	E	C	C
Approach Vol, veh/h		947			1000			1081			1085	
Approach Delay, s/veh		42.6			40.4			34.1			35.3	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.9	49.2	20.0	33.9	20.5	45.6	20.6	33.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.0	32.0	19.0	32.0	19.0	32.0	19.0	32.0
Max Q Clear Time (g_c+I1), s	12.3	18.0	15.4	18.3	15.9	20.0	16.0	23.1
Green Ext Time (p_c), s	0.2	9.5	0.2	7.7	0.2	8.4	0.1	5.7

Intersection Summary	
HCM 2010 Ctrl Delay	37.9
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.79	2.77	2.93	2.92
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	947	1000	1081	1085
Effct. Green for Bike (s)	32.0	31.8	42.5	40.5
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	533	530	708	675
Bicycle Delay (s/bike)	32.3	32.4	25.0	26.3
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.64	3.68	3.26	3.26
Bicycle LOS	D	D	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	142	729	891	42	116	216
Future Volume (veh/h)	142	729	891	42	116	216
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1800	1600	1800
Adj Flow Rate, veh/h	161	828	1012	48	126	252
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	306	1850	1485	664	649	1303
Arrive On Green	0.09	0.54	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1619	3510	3510	1530	1524	3060
Grp Volume(v), veh/h	161	828	1012	48	126	252
Grp Sat Flow(s),veh/h/ln	1619	1710	1710	1530	1524	1530
Q Serve(g_s), s	6.1	17.6	28.5	2.2	6.2	6.2
Cycle Q Clear(g_c), s	6.1	17.6	28.5	2.2	6.2	6.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	306	1850	1485	664	649	1303
V/C Ratio(X)	0.53	0.45	0.68	0.07	0.19	0.19
Avail Cap(c_a), veh/h	418	2625	2024	905	649	1303
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.94	0.94	1.00	1.00
Uniform Delay (d), s/veh	19.7	16.7	27.3	19.8	21.6	21.6
Incr Delay (d2), s/veh	1.1	0.1	0.5	0.0	0.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	8.3	13.6	0.9	2.7	6.6
LnGrp Delay(d),s/veh	20.8	16.8	27.8	19.9	22.2	21.9
LnGrp LOS	C	B	C	B	C	C
Approach Vol, veh/h		989	1060		378	
Approach Delay, s/veh		17.5	27.4		22.0	
Approach LOS		B	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				66.9		53.1	12.8	54.1
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				89.6		21.4	16.6	68.5
Max Q Clear Time (g_c+I1), s				19.6		8.2	8.1	30.5
Green Ext Time (p_c), s				23.7		1.1	0.2	19.1

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.76	2.64	2.44
Pedestrian Crosswalk LOS	C	B	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	989	1060	377
Effct. Green for Bike (s)	69.2	50.6	46.8
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	1153	843	780
Bicycle Delay (s/bike)	10.8	20.1	22.3
Bicycle Compliance	Fair	Fair	Fair
Bicycle LOS Score	3.29	3.37	2.79
Bicycle LOS	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	8	296	27	25	2	152	1181	17	7	1011	209
Future Volume (veh/h)	306	8	296	27	25	2	152	1181	17	7	1011	209
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Adj Flow Rate, veh/h	354	0	336	31	28	2	173	1342	19	8	1149	238
Adj No. of Lanes	2	0	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	726	0	554	85	179	80	223	3170	45	46	1797	1147
Arrive On Green	0.22	0.00	0.22	0.05	0.05	0.05	0.14	0.63	0.63	0.03	0.53	0.53
Sat Flow, veh/h	3238	0	1530	1619	3420	1530	1619	4993	71	1619	3420	1530
Grp Volume(v), veh/h	354	0	336	31	28	2	173	881	480	8	1149	238
Grp Sat Flow(s),veh/h/ln	1619	0	1530	1619	1710	1530	1619	1638	1788	1619	1710	1530
Q Serve(g_s), s	12.7	0.0	23.9	2.5	1.0	0.2	13.7	17.9	17.9	0.6	31.9	6.1
Cycle Q Clear(g_c), s	12.7	0.0	23.9	2.5	1.0	0.2	13.7	17.9	17.9	0.6	31.9	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	726	0	554	85	179	80	223	2080	1135	46	1797	1147
V/C Ratio(X)	0.49	0.00	0.61	0.37	0.16	0.02	0.78	0.42	0.42	0.17	0.64	0.21
Avail Cap(c_a), veh/h	840	0	608	420	887	397	262	2080	1135	262	1797	1147
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	0.0	34.7	60.9	60.2	59.8	55.4	12.1	12.1	63.1	22.5	4.9
Incr Delay (d2), s/veh	0.5	0.0	1.4	2.6	0.4	0.1	11.7	0.6	1.2	1.8	1.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	10.3	1.2	0.5	0.1	6.9	8.3	9.2	0.3	15.4	5.0
LnGrp Delay(d),s/veh	45.4	0.0	36.1	63.5	60.6	59.9	67.1	12.8	13.3	64.9	24.3	5.3
LnGrp LOS	D		D	E	E	E	E	B	B	E	C	A
Approach Vol, veh/h		690			61			1534			1395	
Approach Delay, s/veh		40.9			62.0			19.0			21.3	
Approach LOS		D			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	86.4		31.8	20.3	71.9		9.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	19.0	32.0		32.0	19.0	32.0		32.0
Max Q Clear Time (g_c+I1), s	2.6	19.9		25.9	15.7	33.9		4.5
Green Ext Time (p_c), s	0.0	10.7		1.4	0.1	0.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	66.5	66.5	66.5	66.5
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.55	2.34	2.97	3.05
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	693	61	1534	1395
Effct. Green for Bike (s)	24.3	10.6	91.7	70.2
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	365	159	1379	1056
Bicycle Delay (s/bike)	44.4	56.3	6.4	14.8
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	3.82	2.91	3.32	3.65
Bicycle LOS	D	C	C	D

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	22	1	157	10	0	268
Future Vol, veh/h	22	1	157	10	0	268
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	23	1	165	11	0	282

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	312	88	0	0	176	0
Stage 1	171	-	-	-	-	-
Stage 2	141	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	661	959	-	-	1412	-
Stage 1	848	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	661	959	-	-	1412	-
Mov Cap-2 Maneuver	695	-	-	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	877	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	703	1412	-
HCM Lane V/C Ratio	-	-	0.034	-	-
HCM Control Delay (s)	-	-	10.3	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	52.3
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	425
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.89
Prob of Blocked Lane	0.43
Delay for adq Gap	58.55
Avg Ped Delay (s)	52.34

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	52.3
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	425
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.89
Prob of Blocked Lane	0.43
Delay for adq Gap	58.55
Avg Ped Delay (s)	52.34

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	11	0	167	5	0	290
Future Vol, veh/h	11	0	167	5	0	290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	12	0	176	5	0	305

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	331	91	0	0	181	0
Stage 1	178	-	-	-	-	-
Stage 2	153	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	644	955	-	-	1407	-
Stage 1	841	-	-	-	-	-
Stage 2	865	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	644	955	-	-	1407	-
Mov Cap-2 Maneuver	683	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	865	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	683	1407	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	-	-	10.4	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	64
Level of Service	F

Crosswalk	
Length (ft)	57
Lanes Crossed	4
Veh Vol Crossed	457
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.29
Prob of Delayed X-ing	0.91
Prob of Blocked Lane	0.46
Delay for adq Gap	70.01
Avg Ped Delay (s)	63.96

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	61
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	457
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.91
Prob of Blocked Lane	0.45
Delay for adq Gap	67.01
Avg Ped Delay (s)	61.00

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	32	0	172	14	0	301
Future Vol, veh/h	32	0	172	14	0	301
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	34	0	181	15	0	317

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	346	98	0	0	196	0
Stage 1	188	-	-	-	-	-
Stage 2	158	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	630	945	-	-	1389	-
Stage 1	831	-	-	-	-	-
Stage 2	860	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	630	945	-	-	1389	-
Mov Cap-2 Maneuver	673	-	-	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	860	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	673	1389	-
HCM Lane V/C Ratio	-	-	0.05	-	-
HCM Control Delay (s)	-	-	10.6	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	114.9
Level of Service	F

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	473
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	0.95
Prob of Blocked Lane	0.52
Delay for adq Gap	121.29
Avg Ped Delay (s)	114.92

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	185.9
Level of Service	F

Crosswalk	
Length (ft)	79
Lanes Crossed	4
Veh Vol Crossed	473
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	25.57
Prob of Delayed X-ing	0.97
Prob of Blocked Lane	0.57
Delay for adq Gap	192.58
Avg Ped Delay (s)	185.89

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	348	306	0	0	12	1	460	251	463	567	0
Future Volume (vph)	227	348	306	0	0	12	1	460	251	463	567	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0			1.5			2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91			1.00			0.91		0.97	0.95	
Frt	1.00	0.93			0.85			0.95		1.00	1.00	
Flt Protected	0.95	1.00			1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1470	3049			0			4654		2949	3420	
Flt Permitted	0.95	1.00			1.00			0.94		0.95	1.00	
Satd. Flow (perm)	1470	3049			0			4373		2949	3420	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	244	374	329	0	0	13	1	495	270	498	610	0
RTOR Reduction (vph)	0	97	0	0	13	0	0	97	0	0	0	0
Lane Group Flow (vph)	220	630	0	0	0	0	0	669	0	498	610	0
Turn Type	Perm	NA					Perm	NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6						4					
Actuated Green, G (s)	56.8	56.8			0.0			25.5		24.2	54.2	
Effective Green, g (s)	59.3	59.3			0.0			28.0		26.7	56.7	
Actuated g/C Ratio	0.49	0.49			0.00			0.23		0.22	0.47	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	726	1506			0			1020		656	1615	
v/s Ratio Prot										c0.17	0.18	
v/s Ratio Perm	0.15	0.21						c0.15				
v/c Ratio	0.30	0.42			0.00			0.66		0.76	0.38	
Uniform Delay, d1	18.1	19.4			60.0			41.6		43.6	20.3	
Progression Factor	1.00	1.00			1.00			1.00		1.63	0.66	
Incremental Delay, d2	1.1	0.9			0.0			1.5		4.7	0.1	
Delay (s)	19.1	20.2			60.0			43.2		75.9	13.5	
Level of Service	B	C			E			D		E	B	
Approach Delay (s)		20.0			60.0			43.2			41.6	
Approach LOS		B			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	287	307	367	229	470	0	0	736	202
Future Volume (vph)	0	0	0	287	307	367	229	470	0	0	736	202
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.98	0.85	1.00	1.00			0.97	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1615	1673	1454	1615	3420			5992	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1615	1673	1454	1615	3420			5992	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	293	313	374	234	480	0	0	751	206
RTOR Reduction (vph)	0	0	0	0	4	161	0	0	0	0	48	0
Lane Group Flow (vph)	0	0	0	293	361	161	234	480	0	0	909	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				57.6	57.6	57.6	21.9	53.4			27.0	
Effective Green, g (s)				60.1	60.1	60.1	24.4	55.9			29.5	
Actuated g/C Ratio				0.50	0.50	0.50	0.20	0.47			0.25	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				808	837	728	328	1593			1473	
v/s Ratio Prot					c0.22		c0.14	0.14			c0.15	
v/s Ratio Perm				0.18		0.11						
v/c Ratio				0.36	0.43	0.22	0.71	0.30			0.62	
Uniform Delay, d1				18.3	19.1	16.8	44.5	19.9			40.2	
Progression Factor				1.00	1.00	1.00	1.48	0.89			0.89	
Incremental Delay, d2				1.3	1.6	0.7	6.7	0.1			0.7	
Delay (s)				19.5	20.7	17.5	72.6	17.8			36.4	
Level of Service				B	C	B	E	B			D	
Approach Delay (s)		0.0			19.3			35.8			36.4	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	560	806	0	0	623	536	253	5	80	0	0	0
Future Volume (vph)	560	806	0	0	623	536	253	5	80	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4914	1530	1534	1552	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4914	1530	1534	1552	1454			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	596	857	0	0	663	570	269	5	85	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	333	0	2	55	0	0	0
Lane Group Flow (vph)	596	857	0	0	663	237	143	138	21	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	48.8	80.4			27.1	27.1	30.6	30.6	30.6			
Effective Green, g (s)	51.3	82.9			29.6	29.6	33.1	33.1	33.1			
Actuated g/C Ratio	0.43	0.69			0.25	0.25	0.28	0.28	0.28			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	690	2362			1212	377	423	428	401			
v/s Ratio Prot	c0.37	0.25			0.13							
v/s Ratio Perm						c0.15	c0.09	0.09	0.01			
v/c Ratio	0.86	0.36			0.55	0.63	0.34	0.32	0.05			
Uniform Delay, d1	31.2	7.7			39.4	40.3	34.7	34.5	31.9			
Progression Factor	1.00	1.00			0.95	1.69	1.00	1.00	1.00			
Incremental Delay, d2	10.9	0.1			0.4	2.8	2.2	2.0	0.2			
Delay (s)	42.1	7.7			38.0	70.9	36.9	36.5	32.2			
Level of Service	D	A			D	E	D	D	C			
Approach Delay (s)		21.8			53.2			35.7			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	36.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	79	512	71	2	110	357	670	16	47	223	282	122
Future Volume (vph)	79	512	71	2	110	357	670	16	47	223	282	122
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1600	1800	1800	1800	1600	1800	1800
Total Lost time (s)	2.0	2.0	2.0			2.0	2.0			2.0	2.0	2.0
Lane Util. Factor	1.00	1.00	1.00			0.97	0.95			0.97	1.00	1.00
Frt	1.00	1.00	0.85			1.00	1.00			1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00			0.95	1.00			0.95	1.00	1.00
Satd. Flow (prot)	1615	1800	1530			2949	3408			2949	1800	1530
Flt Permitted	0.95	1.00	1.00			0.95	1.00			0.95	1.00	1.00
Satd. Flow (perm)	1615	1800	1530			2949	3408			2949	1800	1530
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	85	551	76	2	118	384	720	17	51	240	303	131
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	77
Lane Group Flow (vph)	85	551	78	0	0	502	737	0	0	291	303	54
Turn Type	Prot	NA	Prot		Prot	Prot	NA		Prot	Prot	NA	pm+ov
Protected Phases	7	4	4		3	3	8		5	5	2	3
Permitted Phases												2
Actuated Green, G (s)	13.1	37.4	37.4			19.5	43.8			11.7	24.7	44.2
Effective Green, g (s)	15.6	39.9	39.9			22.0	46.3			14.2	27.2	49.2
Actuated g/C Ratio	0.13	0.33	0.33			0.18	0.39			0.12	0.23	0.41
Clearance Time (s)	4.5	4.5	4.5			4.5	4.5			4.5	4.5	4.5
Lane Grp Cap (vph)	209	598	508			540	1314			348	408	652
v/s Ratio Prot	0.05	c0.31	0.05			c0.17	0.22			c0.10	c0.17	0.02
v/s Ratio Perm												0.02
v/c Ratio	0.41	0.92	0.15			0.93	0.56			0.84	0.74	0.08
Uniform Delay, d1	47.9	38.5	28.2			48.2	28.9			51.8	43.1	21.6
Progression Factor	0.89	0.94	0.89			0.54	0.84			1.00	1.00	1.00
Incremental Delay, d2	5.6	21.3	0.6			22.3	1.5			20.6	11.6	0.2
Delay (s)	48.4	57.6	25.7			48.4	25.7			72.4	54.7	21.9
Level of Service	D	E	C			D	C			E	D	C
Approach Delay (s)		53.0					34.9				55.9	
Approach LOS		D					C				E	

Intersection Summary			
HCM 2000 Control Delay	49.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	96.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	29	232	67	60	13	123	328	94
Future Volume (vph)	29	232	67	60	13	123	328	94
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1600	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	
Lane Util. Factor	1.00	0.95			1.00	1.00	0.88	
Frt	1.00	0.95			1.00	1.00	0.85	
Flt Protected	0.95	1.00			0.95	0.95	1.00	
Satd. Flow (prot)	1615	3238			1520	1520	2693	
Flt Permitted	0.95	1.00			0.95	0.95	1.00	
Satd. Flow (perm)	1615	3238			1520	1520	2693	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	31	249	72	65	14	132	353	101
RTOR Reduction (vph)	0	14	0	0	0	0	194	0
Lane Group Flow (vph)	31	372	0	0	14	132	260	0
Turn Type	Prot	NA			Prot	Prot	Perm	
Protected Phases	1	6			9	9		
Permitted Phases							9	
Actuated Green, G (s)	5.0	18.0			10.9	10.9	10.9	
Effective Green, g (s)	7.5	20.5			13.4	13.4	13.4	
Actuated g/C Ratio	0.06	0.17			0.11	0.11	0.11	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	100	553			169	169	300	
v/s Ratio Prot	0.02	0.11			0.01	0.09		
v/s Ratio Perm							c0.10	
v/c Ratio	0.31	0.67			0.08	0.78	0.87	
Uniform Delay, d1	53.8	46.6			47.8	51.9	52.4	
Progression Factor	1.00	1.00			0.83	0.79	0.66	
Incremental Delay, d2	7.9	6.4			0.9	28.6	26.5	
Delay (s)	61.7	53.0			40.5	69.8	61.3	
Level of Service	E	D			D	E	E	
Approach Delay (s)		53.7				62.7		
Approach LOS		D				E		

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: S Arrowhead Avenue & W Mill Street/E Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	792	118	78	938	41	152	283	75	38	282	70
Future Volume (vph)	67	792	118	78	938	41	152	283	75	38	282	70
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3354		1615	3398		1615	3312		1615	3318	
Flt Permitted	0.12	1.00		0.15	1.00		0.48	1.00		0.48	1.00	
Satd. Flow (perm)	212	3354		257	3398		819	3312		812	3318	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	861	128	85	1020	45	165	308	82	41	307	76
RTOR Reduction (vph)	0	12	0	0	3	0	0	16	0	0	15	0
Lane Group Flow (vph)	73	977	0	85	1062	0	165	374	0	41	368	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	50.4	50.4		50.4	50.4		60.6	60.6		60.6	60.6	
Effective Green, g (s)	52.9	52.9		52.9	52.9		63.1	63.1		63.1	63.1	
Actuated g/C Ratio	0.44	0.44		0.44	0.44		0.53	0.53		0.53	0.53	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	93	1478		113	1497		430	1741		426	1744	
v/s Ratio Prot		0.29			0.31			0.11			0.11	
v/s Ratio Perm	c0.34			0.33			c0.20			0.05		
v/c Ratio	0.78	0.66		0.75	0.71		0.38	0.21		0.10	0.21	
Uniform Delay, d1	28.7	26.5		28.1	27.3		16.9	15.2		14.2	15.2	
Progression Factor	0.74	0.61		1.24	1.20		1.00	1.00		1.00	1.00	
Incremental Delay, d2	21.0	0.6		20.3	1.3		2.6	0.3		0.4	0.3	
Delay (s)	42.3	16.8		55.1	34.1		19.5	15.5		14.7	15.5	
Level of Service	D	B		E	C		B	B		B	B	
Approach Delay (s)		18.6			35.6			16.7			15.4	
Approach LOS		B			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	503	203	179	637	124	183	723	110	136	758	126
Future Volume (vph)	184	503	203	179	637	124	183	723	110	136	758	126
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	3420	1530	1615	3420	1530	1615	4817		1615	4809	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1615	3420	1530	1615	3420	1530	1615	4817		1615	4809	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	196	535	216	190	678	132	195	769	117	145	806	134
RTOR Reduction (vph)	0	0	158	0	0	70	0	16	0	0	18	0
Lane Group Flow (vph)	196	535	58	190	678	62	195	871	0	145	922	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	17.3	29.5	29.5	17.1	29.3	29.3	17.4	40.0		15.4	38.0	
Effective Green, g (s)	19.8	32.0	32.0	19.6	31.8	31.8	19.9	42.5		17.9	40.5	
Actuated g/C Ratio	0.17	0.27	0.27	0.16	0.27	0.27	0.17	0.35		0.15	0.34	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	266	912	408	263	906	405	267	1706		240	1623	
v/s Ratio Prot	c0.12	0.16		0.12	c0.20		c0.12	0.18		0.09	c0.19	
v/s Ratio Perm			0.04			0.04						
v/c Ratio	0.74	0.59	0.14	0.72	0.75	0.15	0.73	0.51		0.60	0.57	
Uniform Delay, d1	47.6	38.3	33.5	47.6	40.4	33.8	47.5	30.5		47.7	32.6	
Progression Factor	0.59	1.06	4.58	0.86	1.56	2.99	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	0.9	0.1	8.6	3.1	0.2	9.8	1.1		4.2	1.4	
Delay (s)	37.1	41.4	153.8	49.7	66.1	101.3	57.3	31.6		52.0	34.0	
Level of Service	D	D	F	D	E	F	E	C		D	C	
Approach Delay (s)		66.1			67.6			36.3			36.4	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	142	729	891	42	116	216
Future Volume (vph)	142	729	891	42	116	216
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.93	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.97	1.00
Satd. Flow (prot)	1615	3420	3420	1530	2807	1392
Flt Permitted	0.13	1.00	1.00	1.00	0.97	1.00
Satd. Flow (perm)	214	3420	3420	1530	2807	1392
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	161	828	1012	48	132	245
RTOR Reduction (vph)	0	0	0	28	75	74
Lane Group Flow (vph)	161	828	1013	20	180	48
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	66.7	66.7	48.1	48.1	44.3	44.3
Effective Green, g (s)	69.2	69.2	50.6	50.6	46.8	46.8
Actuated g/C Ratio	0.58	0.58	0.42	0.42	0.39	0.39
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	317	1972	1442	645	1094	542
v/s Ratio Prot	c0.07	0.24	c0.30		c0.06	
v/s Ratio Perm	0.22			0.01		0.03
v/c Ratio	0.51	0.42	0.70	0.03	0.16	0.09
Uniform Delay, d1	17.3	14.2	28.5	20.3	23.9	23.1
Progression Factor	1.24	1.55	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	1.6	0.0	0.3	0.3
Delay (s)	22.7	22.2	30.1	20.4	24.2	23.4
Level of Service	C	C	C	C	C	C
Approach Delay (s)		22.2	29.6		23.9	
Approach LOS		C	C		C	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	306	8	296	27	25	2	152	1181	17	7	1011	209
Future Volume (vph)	306	8	296	27	25	2	152	1181	17	7	1011	209
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1534	1632	1530	1615	3420	1530	1615	4904		1615	3420	1530
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1534	1632	1530	1615	3420	1530	1615	4904		1615	3420	1530
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	348	9	336	31	28	2	173	1342	19	8	1149	238
RTOR Reduction (vph)	0	0	155	0	0	2	0	0	0	0	0	64
Lane Group Flow (vph)	177	180	181	31	28	0	173	1361	0	8	1149	174
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	21.8	21.8	41.3	7.0	7.0	7.0	19.5	84.7		1.5	66.7	88.5
Effective Green, g (s)	24.3	24.3	46.3	9.5	9.5	9.5	22.0	87.2		4.0	69.2	93.5
Actuated g/C Ratio	0.18	0.18	0.35	0.07	0.07	0.07	0.17	0.66		0.03	0.52	0.70
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	280	298	532	115	244	109	267	3215		48	1779	1098
v/s Ratio Prot	c0.12	0.11	0.06	c0.02	0.01		c0.11	0.28		0.00	c0.34	0.03
v/s Ratio Perm			0.06			0.00						0.08
v/c Ratio	0.63	0.60	0.34	0.27	0.11	0.00	0.65	0.42		0.17	0.65	0.16
Uniform Delay, d1	50.2	49.9	32.1	58.5	57.8	57.3	51.9	10.9		62.9	23.0	6.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.6	3.4	0.4	1.3	0.2	0.0	5.3	0.4		1.6	1.8	0.1
Delay (s)	54.8	53.4	32.4	59.7	58.0	57.3	57.2	11.3		64.5	24.9	6.7
Level of Service	D	D	C	E	E	E	E	B		E	C	A
Approach Delay (s)		43.6			58.9			16.5			22.0	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	133.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	420	405	0	0	34	0	513	395	447	673	0
Future Volume (veh/h)	205	420	405	0	0	34	0	513	395	447	673	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	216	442	426				0	540	416	471	708	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	806	846	719				0	1138	531	616	1881	0
Arrive On Green	0.45	0.45	0.45				0.00	0.33	0.33	0.18	0.52	0.00
Sat Flow, veh/h	1810	1900	1615				0	3629	1615	3510	3705	0
Grp Volume(v), veh/h	216	442	426				0	540	416	471	708	0
Grp Sat Flow(s),veh/h/ln	1810	1900	1615				0	1729	1615	1755	1805	0
Q Serve(g_s), s	9.0	20.2	23.8				0.0	14.9	27.9	15.3	14.0	0.0
Cycle Q Clear(g_c), s	9.0	20.2	23.8				0.0	14.9	27.9	15.3	14.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	806	846	719				0	1138	531	616	1881	0
V/C Ratio(X)	0.27	0.52	0.59				0.00	0.47	0.78	0.76	0.38	0.00
Avail Cap(c_a), veh/h	806	846	719				0	1225	572	863	2226	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.74	0.74	0.00
Uniform Delay (d), s/veh	20.9	24.0	25.1				0.0	32.0	36.4	47.1	17.1	0.0
Incr Delay (d2), s/veh	0.8	2.3	3.6				0.0	0.3	6.6	2.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	11.1	11.4				0.0	7.2	13.4	7.6	7.0	0.0
LnGrp Delay(d),s/veh	21.8	26.3	28.6				0.0	32.3	42.9	49.1	17.2	0.0
LnGrp LOS	C	C	C					C	D	D	B	
Approach Vol, veh/h		1084						956			1179	
Approach Delay, s/veh		26.3						36.9			29.9	
Approach LOS		C						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			23.1	41.5		55.5		64.5
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			17.3	29.9		25.8		16.0
Green Ext Time (p_c), s			1.2	7.0		5.4		17.9

Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.42	2.40	2.73	2.79
Pedestrian Crosswalk LOS	B	B	B	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1084	36	956	1179
Effct. Green for Bike (s)	57.0	0.0	31.7	59.0
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	950	0	528	983
Bicycle Delay (s/bike)	16.5	0.0	32.5	15.5
Bicycle Compliance	Fair		Poor	Fair
Bicycle LOS Score	3.84	0.00	2.53	3.40
Bicycle LOS	D		B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	499	670	955	297	442	0	0	632	91
Future Volume (veh/h)	0	0	0	499	670	955	297	442	0	0	632	91
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				525	930	855	313	465	0	0	665	96
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1052	1105	939	370	1390	0	0	957	135
Arrive On Green				0.58	0.58	0.58	0.20	0.39	0.00	0.00	0.16	0.16
Sat Flow, veh/h				1810	1900	1615	1810	3705	0	0	6101	822
Grp Volume(v), veh/h				525	930	855	313	465	0	0	556	205
Grp Sat Flow(s),veh/h/ln				1810	1900	1615	1810	1805	0	0	1634	1755
Q Serve(g_s), s				20.5	48.1	56.5	20.0	10.9	0.0	0.0	12.8	13.3
Cycle Q Clear(g_c), s				20.5	48.1	56.5	20.0	10.9	0.0	0.0	12.8	13.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.47
Lane Grp Cap(c), veh/h				1052	1105	939	370	1390	0	0	804	288
V/C Ratio(X)				0.50	0.84	0.91	0.85	0.33	0.00	0.00	0.69	0.71
Avail Cap(c_a), veh/h				1052	1105	939	377	1432	0	0	842	301
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.75	0.75	0.00	0.00	0.59	0.59
Uniform Delay (d), s/veh				14.8	20.6	22.3	45.9	26.0	0.0	0.0	47.3	47.5
Incr Delay (d2), s/veh				1.7	7.8	14.4	12.6	0.1	0.0	0.0	1.4	4.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.7	27.5	28.7	11.3	5.4	0.0	0.0	5.9	6.8
LnGrp Delay(d),s/veh				16.5	28.4	36.7	58.5	26.1	0.0	0.0	48.7	51.9
LnGrp LOS				B	C	D	E	C			D	D
Approach Vol, veh/h					2310			778			761	
Approach Delay, s/veh					28.8			39.2			49.5	
Approach LOS					C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		71.8		48.2			26.5	21.7
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		65.9		45.1			22.5	18.1
Max Q Clear Time (g_c+I1), s		58.5		12.9			22.0	15.3
Green Ext Time (p_c), s		6.0		9.9			0.1	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	35.0
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	119.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.32	2.69	2.63	2.84
Pedestrian Crosswalk LOS	B	B	B	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	2235	778	761
Effct. Green for Bike (s)	0.0	69.2	46.8	20.2
Cross Street Width (ft)	75.9	119.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	1153	780	337
Bicycle Delay (s/bike)	0.0	10.8	22.3	41.5
Bicycle Compliance		Fair	Fair	Poor
Bicycle LOS Score	0.00	7.08	2.80	2.52
Bicycle LOS		F	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	671	1413	0	0	452	283	293	3	114	0	0	0
Future Volume (veh/h)	671	1413	0	0	452	283	293	3	114	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	706	1487	0	0	476	298	347	0	81			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	770	2228	0	0	908	283	1265	0	564			
Arrive On Green	0.43	0.62	0.00	0.00	0.18	0.18	0.35	0.00	0.35			
Sat Flow, veh/h	1810	3705	0	0	5358	1615	3619	0	1615			
Grp Volume(v), veh/h	706	1487	0	0	476	298	347	0	81			
Grp Sat Flow(s),veh/h/ln	1810	1805	0	0	1729	1615	1810	0	1615			
Q Serve(g_s), s	44.1	32.2	0.0	0.0	10.0	21.0	8.3	0.0	4.1			
Cycle Q Clear(g_c), s	44.1	32.2	0.0	0.0	10.0	21.0	8.3	0.0	4.1			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	770	2228	0	0	908	283	1265	0	564			
V/C Ratio(X)	0.92	0.67	0.00	0.00	0.52	1.05	0.27	0.00	0.14			
Avail Cap(c_a), veh/h	1056	2798	0	0	908	283	1265	0	564			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.83	0.83	1.00	0.00	1.00			
Uniform Delay (d), s/veh	32.5	15.0	0.0	0.0	45.0	49.5	28.1	0.0	26.7			
Incr Delay (d2), s/veh	9.8	0.4	0.0	0.0	0.5	63.7	0.5	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	24.1	16.0	0.0	0.0	4.8	14.3	4.2	0.0	1.9			
LnGrp Delay(d),s/veh	42.3	15.4	0.0	0.0	45.4	113.2	28.6	0.0	27.3			
LnGrp LOS	D	B			D	F	C		C			
Approach Vol, veh/h		2193			774			428				
Approach Delay, s/veh		24.1			71.5			28.4				
Approach LOS		C			E			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		43.9		76.1			53.1	23.0
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		20.5		90.5			67.5	18.5
Max Q Clear Time (g_c+I1), s		10.3		34.2			46.1	23.0
Green Ext Time (p_c), s		1.1		28.9			2.4	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.4
HCM 2010 LOS	D

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	84.3	36.0	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.96	2.86	2.10	2.23
Pedestrian Crosswalk LOS	C	C	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	2193	774	431	0
Effct. Green for Bike (s)	83.5	20.1	32.5	0.0
Cross Street Width (ft)	36.0	25.8	84.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1392	335	542	0
Bicycle Delay (s/bike)	5.6	41.6	31.9	0.0
Bicycle Compliance	Good	Poor	Poor	
Bicycle LOS Score	3.92	2.38	3.56	0.00
Bicycle LOS	D	B	D	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	141.0	73.1	103.0	63.0	97.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.99	2.91	2.63	2.41	2.89
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	1153	1155	444	464	719
Effct. Green for Bike (s)	38.0	40.5	21.0	21.5	22.0
Cross Street Width (ft)	97.1	63.0	73.1	141.0	103.0
Through Lanes Number	2	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	633	675	350	358	367
Bicycle Delay (s/bike)	28.0	26.3	40.8	40.4	40.0
Bicycle Compliance	Fair	Fair	Poor	Poor	Poor
Bicycle LOS Score	4.00	3.48	3.41	4.10	4.32
Bicycle LOS	D	C	C	D	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	1479	314	114	912	41	102	231	76	59	234	55
Future Volume (veh/h)	92	1479	314	114	912	41	102	231	76	59	234	55
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	97	1557	331	120	960	43	107	243	80	62	246	58
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	304	1739	358	77	2053	92	415	1031	331	404	1116	258
Arrive On Green	0.39	0.39	0.39	0.58	0.58	0.58	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	571	2982	615	244	3520	158	1092	2689	864	1074	2912	674
Grp Volume(v), veh/h	97	923	965	120	492	511	107	161	162	62	151	153
Grp Sat Flow(s),veh/h/ln	571	1805	1792	244	1805	1872	1092	1805	1748	1074	1805	1781
Q Serve(g_s), s	16.4	56.9	61.6	8.4	18.8	18.8	8.8	7.3	7.6	5.0	6.7	7.0
Cycle Q Clear(g_c), s	35.2	56.9	61.6	70.0	18.8	18.8	15.8	7.3	7.6	12.6	6.7	7.0
Prop In Lane	1.00		0.34	1.00		0.08	1.00		0.49	1.00		0.38
Lane Grp Cap(c), veh/h	304	1053	1045	77	1053	1092	415	692	670	404	692	683
V/C Ratio(X)	0.32	0.88	0.92	1.56	0.47	0.47	0.26	0.23	0.24	0.15	0.22	0.22
Avail Cap(c_a), veh/h	304	1053	1045	77	1053	1092	415	692	670	404	692	683
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	32.6	34.0	59.1	14.3	14.3	30.3	25.1	25.1	29.4	24.9	25.0
Incr Delay (d2), s/veh	0.4	6.0	9.6	295.1	0.3	0.3	1.5	0.8	0.9	0.8	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	30.1	33.3	8.9	9.4	9.7	2.8	3.8	3.8	1.6	3.5	3.6
LnGrp Delay(d),s/veh	33.9	38.5	43.6	354.2	14.6	14.6	31.8	25.8	26.0	30.2	25.6	25.7
LnGrp LOS	C	D	D	F	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1985			1123			430			366	
Approach Delay, s/veh		40.8			50.9			27.4			26.4	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		48.0		72.0		48.0		72.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		43.5		67.5		43.5		67.5
Max Q Clear Time (g_c+I1), s		17.8		63.6		14.6		72.0
Green Ext Time (p_c), s		4.7		3.8		4.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	40.9
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.93	2.87	2.54	2.47
Pedestrian Crosswalk LOS	C	C	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1985	1123	430	366
Effct. Green for Bike (s)	70.0	70.0	46.0	46.0
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1167	1167	767	767
Bicycle Delay (s/bike)	10.4	10.4	22.8	22.8
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	4.12	3.40	3.01	2.96
Bicycle LOS	D	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	972	221	169	659	106	193	772	140	211	763	243
Future Volume (veh/h)	159	972	221	169	659	106	193	772	140	211	763	243
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	167	1023	233	178	694	112	203	813	147	222	803	256
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	226	1314	588	237	1335	597	261	1255	225	280	1148	363
Arrive On Green	0.17	0.48	0.48	0.17	0.49	0.49	0.19	0.38	0.38	0.21	0.39	0.39
Sat Flow, veh/h	1810	3610	1615	1810	3610	1615	1810	4423	794	1810	3905	1235
Grp Volume(v), veh/h	167	1023	233	178	694	112	203	634	326	222	710	349
Grp Sat Flow(s),veh/h/ln	1810	1805	1615	1810	1805	1615	1810	1729	1760	1810	1729	1682
Q Serve(g_s), s	10.5	28.2	11.1	11.2	15.7	4.7	12.8	18.1	18.3	14.0	20.7	20.9
Cycle Q Clear(g_c), s	10.5	28.2	11.1	11.2	15.7	4.7	12.8	18.1	18.3	14.0	20.7	20.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		0.73
Lane Grp Cap(c), veh/h	226	1314	588	237	1335	597	261	981	499	280	1016	494
V/C Ratio(X)	0.74	0.78	0.40	0.75	0.52	0.19	0.78	0.65	0.65	0.79	0.70	0.71
Avail Cap(c_a), veh/h	238	1450	649	252	1477	661	280	981	499	303	1016	494
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	0.33	0.33	0.33	0.76	0.76	0.76	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	27.0	22.5	47.7	23.2	20.4	46.6	32.4	32.5	45.8	32.1	32.2
Incr Delay (d2), s/veh	3.8	0.9	0.1	8.7	0.2	0.1	12.1	3.3	6.5	12.6	4.0	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	14.0	4.9	6.2	7.9	2.1	7.3	9.0	9.8	8.0	10.4	10.8
LnGrp Delay(d),s/veh	52.0	27.8	22.7	56.3	23.4	20.5	58.7	35.7	39.0	58.4	36.1	40.4
LnGrp LOS	D	C	C	E	C	C	E	D	D	E	D	D
Approach Vol, veh/h		1423			984			1163			1281	
Approach Delay, s/veh		29.8			29.1			40.6			41.1	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.6	36.0	17.7	45.7	19.3	37.3	17.0	46.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	17.6	24.5	14.2	45.7	16.1	26.0	13.3	46.6
Max Q Clear Time (g_c+I1), s	16.0	20.3	13.2	30.2	14.8	22.9	12.5	17.7
Green Ext Time (p_c), s	0.1	3.6	0.0	11.0	0.1	2.7	0.0	16.7

Intersection Summary	
HCM 2010 Ctrl Delay	35.2
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.89	2.86	2.95	2.95
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1423	984	1163	1281
Effct. Green for Bike (s)	44.9	45.8	31.0	32.4
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	748	763	517	540
Bicycle Delay (s/bike)	23.5	22.9	33.0	32.0
Bicycle Compliance	Fair	Fair	Poor	Poor
Bicycle LOS Score	4.03	3.67	3.30	3.37
Bicycle LOS	D	D	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	214	1019	705	117	67	194
Future Volume (veh/h)	214	1019	705	117	67	194
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	225	1073	742	123	71	204
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	393	1780	1315	588	857	1529
Arrive On Green	0.11	0.49	0.36	0.36	0.47	0.47
Sat Flow, veh/h	1810	3705	3705	1615	1810	3230
Grp Volume(v), veh/h	225	1073	742	123	71	204
Grp Sat Flow(s),veh/h/ln	1810	1805	1805	1615	1810	1615
Q Serve(g_s), s	8.6	25.7	19.7	6.3	2.6	4.3
Cycle Q Clear(g_c), s	8.6	25.7	19.7	6.3	2.6	4.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	393	1780	1315	588	857	1529
V/C Ratio(X)	0.57	0.60	0.56	0.21	0.08	0.13
Avail Cap(c_a), veh/h	491	2557	1895	848	857	1529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.56	0.56	0.78	0.78	1.00	1.00
Uniform Delay (d), s/veh	20.6	21.9	30.5	26.3	17.3	17.8
Incr Delay (d2), s/veh	0.7	0.2	0.3	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	12.9	9.8	2.8	1.3	5.2
LnGrp Delay(d),s/veh	21.4	22.1	30.8	26.4	17.5	17.9
LnGrp LOS	C	C	C	C	B	B
Approach Vol, veh/h		1298	865		275	
Approach Delay, s/veh		22.0	30.2		17.8	
Approach LOS		C	C		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				61.2		58.8	15.5	45.7
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				82.5		28.5	17.5	60.5
Max Q Clear Time (g_c+I1), s				27.7		6.3	10.6	21.7
Green Ext Time (p_c), s				22.4		0.9	0.3	19.5

Intersection Summary	
HCM 2010 Ctrl Delay	24.4
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.76	2.64	2.44
Pedestrian Crosswalk LOS	C	B	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	1298	865	275
Effct. Green for Bike (s)	56.3	36.3	59.7
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	938	605	995
Bicycle Delay (s/bike)	16.9	29.2	15.2
Bicycle Compliance	Fair	Fair	Fair
Bicycle LOS Score	3.55	3.21	2.70
Bicycle LOS	D	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	86	436	30	26	2	423	1010	161	22	1494	425
Future Volume (veh/h)	239	86	436	30	26	2	423	1010	161	22	1494	425
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	172	204	459	32	27	2	445	1063	169	23	1573	447
Adj No. of Lanes	1	1	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	309	325	626	103	206	92	392	2990	475	78	1765	1065
Arrive On Green	0.17	0.17	0.17	0.06	0.06	0.06	0.22	0.66	0.66	0.04	0.49	0.49
Sat Flow, veh/h	1810	1900	1615	1810	3610	1615	1810	4515	717	1810	3610	1615
Grp Volume(v), veh/h	172	204	459	32	27	2	445	814	418	23	1573	447
Grp Sat Flow(s),veh/h/ln	1810	1900	1615	1810	1805	1615	1810	1729	1773	1810	1805	1615
Q Serve(g_s), s	10.5	12.0	20.5	2.0	0.9	0.1	26.0	12.5	12.5	1.5	47.4	15.6
Cycle Q Clear(g_c), s	10.5	12.0	20.5	2.0	0.9	0.1	26.0	12.5	12.5	1.5	47.4	15.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.40	1.00		1.00
Lane Grp Cap(c), veh/h	309	325	626	103	206	92	392	2290	1175	78	1765	1065
V/C Ratio(X)	0.56	0.63	0.73	0.31	0.13	0.02	1.14	0.36	0.36	0.29	0.89	0.42
Avail Cap(c_a), veh/h	309	325	626	309	617	276	392	2290	1175	113	1765	1065
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	46.2	31.4	54.3	53.8	53.4	47.0	8.9	9.0	55.6	27.8	9.6
Incr Delay (d2), s/veh	1.8	3.1	3.6	1.7	0.3	0.1	87.5	0.4	0.8	2.1	7.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	6.6	13.6	1.1	0.4	0.1	22.5	6.0	6.3	0.8	25.4	10.8
LnGrp Delay(d),s/veh	47.4	49.3	35.1	56.0	54.0	53.5	134.5	9.4	9.8	57.7	35.1	10.8
LnGrp LOS	D	D	D	E	D	D	F	A	A	E	D	B
Approach Vol, veh/h		835			61			1677			2043	
Approach Delay, s/veh		41.1			55.0			42.7			30.0	
Approach LOS		D			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.2	81.5		22.5	28.0	60.7		8.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.0	61.0		18.0	23.5	42.5		18.0
Max Q Clear Time (g_c+I1), s	3.5	14.5		22.5	28.0	49.4		4.0
Green Ext Time (p_c), s	0.0	37.9		0.0	0.0	0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	37.0
HCM 2010 LOS	D

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.66	2.39	3.08	3.08
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	802	61	1677	2043
Effct. Green for Bike (s)	18.9	10.2	79.3	45.0
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	315	170	1322	750
Bicycle Delay (s/bike)	42.6	50.2	6.9	23.4
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	4.00	2.91	3.40	4.18
Bicycle LOS	D	C	C	D

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	420	405	0	0	34	0	513	395	447	673	0
Future Volume (vph)	205	420	405	0	0	34	0	513	395	447	673	0
Ideal Flow (vphpl)	1800	1900	1900	1900	1900	1900	1900	1900	1900	1700	1900	1900
Total Lost time (s)	2.0	2.0			1.5			2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91			1.00			0.91		0.97	0.95	
Frt	1.00	0.93			0.85			0.93		1.00	1.00	
Flt Protected	0.95	1.00			1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1556	3206			0			4848		3133	3610	
Flt Permitted	0.95	1.00			1.00			1.00		0.95	1.00	
Satd. Flow (perm)	1556	3206			0			4848		3133	3610	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	216	442	426	0	0	36	0	540	416	471	708	0
RTOR Reduction (vph)	0	112	0	0	36	0	0	117	0	0	0	0
Lane Group Flow (vph)	194	778	0	0	0	0	0	839	0	471	708	0
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6											
Actuated Green, G (s)	54.5	54.5			0.0			29.2		22.8	56.5	
Effective Green, g (s)	57.0	57.0			0.0			31.7		25.3	59.0	
Actuated g/C Ratio	0.48	0.48			0.00			0.26		0.21	0.49	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	739	1522			0			1280		660	1774	
v/s Ratio Prot								c0.17		c0.15	0.20	
v/s Ratio Perm	0.12	0.24										
v/c Ratio	0.26	0.51			0.00			0.66		0.71	0.40	
Uniform Delay, d1	18.9	21.8			60.0			39.3		44.0	19.3	
Progression Factor	1.00	1.00			1.00			1.00		1.06	2.02	
Incremental Delay, d2	0.9	1.2			0.0			1.2		2.9	0.1	
Delay (s)	19.8	23.1			60.0			40.5		49.5	39.0	
Level of Service	B	C			E			D		D	D	
Approach Delay (s)		22.5			60.0			40.5			43.2	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	35.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Inland Center Drive & I-215 NB On Ramp/I-215 NB Off Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	499	670	955	297	442	0	0	632	91
Future Volume (vph)	0	0	0	499	670	955	297	442	0	0	632	91
Ideal Flow (vphpl)	1900	1900	1900	1800	1900	1900	1800	1900	1900	1900	1900	1900
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.97	0.85	1.00	1.00			0.98	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1710	1745	1534	1710	3610			6412	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1710	1745	1534	1710	3610			6412	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	525	705	1005	313	465	0	0	665	96
RTOR Reduction (vph)	0	0	0	0	8	100	0	0	0	0	22	0
Lane Group Flow (vph)	0	0	0	525	898	704	313	465	0	0	739	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				66.7	66.7	66.7	22.1	44.3			17.7	
Effective Green, g (s)				69.2	69.2	69.2	24.6	46.8			20.2	
Actuated g/C Ratio				0.58	0.58	0.58	0.21	0.39			0.17	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				986	1006	884	350	1407			1079	
v/s Ratio Prot					c0.51		c0.18	0.13			c0.12	
v/s Ratio Perm				0.31		0.46						
v/c Ratio				0.53	0.89	0.80	0.89	0.33			0.69	
Uniform Delay, d1				15.5	22.1	19.9	46.4	25.6			46.9	
Progression Factor				1.00	1.00	1.00	0.89	0.62			1.11	
Incremental Delay, d2				2.1	11.9	7.4	22.2	0.1			1.7	
Delay (s)				17.6	34.0	27.3	63.3	15.9			53.8	
Level of Service				B	C	C	E	B			D	
Approach Delay (s)		0.0			27.7			35.0			53.8	
Approach LOS		A			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	671	1413	0	0	452	283	293	3	114	0	0	0
Future Volume (vph)	671	1413	0	0	452	283	293	3	114	0	0	0
Ideal Flow (vphpl)	1800	1900	1900	1900	1900	1900	1800	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1710	3610			5187	1615	1624	1635	1534			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1710	3610			5187	1615	1624	1635	1534			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	706	1487	0	0	476	298	308	3	120	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	248	0	2	62	0	0	0
Lane Group Flow (vph)	706	1487	0	0	476	50	163	158	46	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	58.9	81.0			17.6	17.6	30.0	30.0	30.0			
Effective Green, g (s)	61.4	83.5			20.1	20.1	32.5	32.5	32.5			
Actuated g/C Ratio	0.51	0.70			0.17	0.17	0.27	0.27	0.27			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	874	2511			868	270	439	442	415			
v/s Ratio Prot	c0.41	c0.41			0.09							
v/s Ratio Perm						0.03	c0.10	0.10	0.03			
v/c Ratio	0.81	0.59			0.55	0.18	0.37	0.36	0.11			
Uniform Delay, d1	24.4	9.4			45.8	42.9	35.5	35.3	32.9			
Progression Factor	1.00	1.00			0.90	4.28	1.00	1.00	1.00			
Incremental Delay, d2	5.5	0.4			0.6	0.3	2.4	2.2	0.5			
Delay (s)	29.9	9.8			41.6	183.9	37.9	37.6	33.4			
Level of Service	C	A			D	F	D	D	C			
Approach Delay (s)		16.3			96.4			36.6			0.0	
Approach LOS		B			F			D			A	

Intersection Summary			
HCM 2000 Control Delay	37.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	148	859	88	91	329	657	20	17	75	229	101	56
Future Volume (vph)	148	859	88	91	329	657	20	17	75	229	101	56
Ideal Flow (vphpl)	1800	1900	1900	1900	1700	1900	1900	1900	1700	1900	1900	1800
Total Lost time (s)	2.0	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	*1.00	*1.00		*1.00	*1.00			*1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00
Flt Protected	1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00
Satd. Flow (prot)	1800	3800	1900		3400	3800			3400	1900	1900	1800
Flt Permitted	1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00
Satd. Flow (perm)	1800	3800	1900		3400	3800			3400	1900	1900	1800
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	156	904	93	96	346	692	21	18	79	241	106	59
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	62	0
Lane Group Flow (vph)	156	913	84	0	442	713	0	0	97	241	44	59
Turn Type	Prot	NA	Prot	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot
Protected Phases	7	4	4	3	3	8		5	5	2	3	1
Permitted Phases											2	
Actuated Green, G (s)	16.0	35.5	35.5		18.5	38.0			5.0	18.5	37.0	5.5
Effective Green, g (s)	18.5	38.0	38.0		21.0	40.5			7.5	21.0	42.0	8.0
Actuated g/C Ratio	0.15	0.32	0.32		0.18	0.34			0.06	0.18	0.35	0.07
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5			4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	277	1203	601		595	1282			212	332	696	120
v/s Ratio Prot	0.09	c0.24	0.04		c0.13	0.19			0.03	c0.13	0.01	c0.03
v/s Ratio Perm											0.01	
v/c Ratio	0.56	0.76	0.14		0.74	0.56			0.46	0.73	0.06	0.49
Uniform Delay, d1	47.0	36.9	29.3		46.9	32.4			54.3	46.8	25.9	54.0
Progression Factor	0.85	0.88	0.83		0.53	0.97			1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	4.0	0.4		7.5	1.6			7.0	13.0	0.2	13.7
Delay (s)	46.8	36.3	24.9		32.5	33.1			61.2	59.8	26.1	67.7
Level of Service	D	D	C		C	C			E	E	C	E
Approach Delay (s)		36.9				32.9				52.1		
Approach LOS		D				C				D		

Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations							
Traffic Volume (vph)	246	88	50	6	158	451	68
Future Volume (vph)	246	88	50	6	158	451	68
Ideal Flow (vphpl)	1900	1900	1900	1700	1700	1900	1900
Total Lost time (s)	2.0			2.0	2.0	2.0	
Lane Util. Factor	*1.00			1.00	1.00	*1.00	
Frt	1.00			1.00	1.00	1.00	
Flt Protected	1.00			1.00	1.00	1.00	
Satd. Flow (prot)	3800			1700	1700	3800	
Flt Permitted	1.00			1.00	1.00	1.00	
Satd. Flow (perm)	3800			1700	1700	3800	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	259	93	53	6	166	475	72
RTOR Reduction (vph)	11	0	0	0	0	111	0
Lane Group Flow (vph)	394	0	0	6	166	436	0
Turn Type	NA			Prot	Prot	Perm	
Protected Phases	6			9	9		
Permitted Phases						9	
Actuated Green, G (s)	19.0			19.5	19.5	19.5	
Effective Green, g (s)	21.5			22.0	22.0	22.0	
Actuated g/C Ratio	0.18			0.18	0.18	0.18	
Clearance Time (s)	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	680			311	311	696	
v/s Ratio Prot	0.10			0.00	0.10		
v/s Ratio Perm						c0.11	
v/c Ratio	0.58			0.02	0.53	0.63	
Uniform Delay, d1	45.1			40.2	44.4	45.2	
Progression Factor	1.00			1.04	1.04	1.06	
Incremental Delay, d2	3.6			0.1	4.7	3.1	
Delay (s)	48.7			41.8	51.0	51.2	
Level of Service	D			D	D	D	
Approach Delay (s)	51.1				51.1		
Approach LOS	D				D		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	1479	314	114	912	41	102	231	76	59	234	55
Future Volume (vph)	92	1479	314	114	912	41	102	231	76	59	234	55
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1710	3515		1710	3587		1710	3476		1710	3507	
Flt Permitted	0.21	1.00		0.06	1.00		0.50	1.00		0.49	1.00	
Satd. Flow (perm)	377	3515		103	3587		904	3476		877	3507	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	97	1557	331	120	960	43	107	243	80	62	246	58
RTOR Reduction (vph)	0	15	0	0	3	0	0	18	0	0	17	0
Lane Group Flow (vph)	97	1873	0	120	1001	0	107	305	0	62	287	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	67.5	67.5		67.5	67.5		43.5	43.5		43.5	43.5	
Effective Green, g (s)	70.0	70.0		70.0	70.0		46.0	46.0		46.0	46.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.38	0.38		0.38	0.38	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	219	2050		60	2092		346	1332		336	1344	
v/s Ratio Prot		0.53			0.28			0.09			0.08	
v/s Ratio Perm	0.26			c1.17			c0.12			0.07		
v/c Ratio	0.44	0.91		2.00	0.48		0.31	0.23		0.18	0.21	
Uniform Delay, d1	14.0	22.3		25.0	14.4		25.9	25.0		24.6	24.8	
Progression Factor	0.79	1.01		1.91	2.05		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	5.9		494.6	0.1		2.3	0.4		1.2	0.4	
Delay (s)	12.3	28.5		542.3	29.8		28.2	25.4		25.8	25.2	
Level of Service	B	C		F	C		C	C		C	C	
Approach Delay (s)		27.7			84.5			26.1			25.3	
Approach LOS		C			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	43.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	972	221	169	659	106	193	772	140	211	763	243
Future Volume (vph)	159	972	221	169	659	106	193	772	140	211	763	243
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1710	3610	1615	1710	3610	1615	1710	5068		1710	4999	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1710	3610	1615	1710	3610	1615	1710	5068		1710	4999	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	167	1023	233	178	694	112	203	813	147	222	803	256
RTOR Reduction (vph)	0	0	146	0	0	59	0	21	0	0	46	0
Lane Group Flow (vph)	167	1023	87	178	694	53	203	939	0	222	1013	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	12.9	42.5	42.5	13.7	43.3	43.3	16.0	28.5		17.3	29.8	
Effective Green, g (s)	15.4	45.0	45.0	16.2	45.8	45.8	18.5	31.0		19.8	32.3	
Actuated g/C Ratio	0.13	0.38	0.38	0.13	0.38	0.38	0.15	0.26		0.17	0.27	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	219	1353	605	230	1377	616	263	1309		282	1345	
v/s Ratio Prot	0.10	c0.28		c0.10	0.19		0.12	0.19		c0.13	c0.20	
v/s Ratio Perm			0.05			0.03						
v/c Ratio	0.76	0.76	0.14	0.77	0.50	0.09	0.77	0.72		0.79	0.75	
Uniform Delay, d1	50.5	32.7	24.8	50.1	28.4	23.7	48.7	40.5		48.1	40.2	
Progression Factor	0.89	0.86	2.31	0.70	1.69	4.14	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.5	1.2	0.1	14.4	0.3	0.1	13.1	3.4		13.5	3.9	
Delay (s)	52.4	29.3	57.4	49.4	48.2	98.2	61.8	43.9		61.6	44.1	
Level of Service	D	C	E	D	D	F	E	D		E	D	
Approach Delay (s)		36.6			54.1			47.0			47.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	214	1019	705	117	67	194
Future Volume (vph)	214	1019	705	117	67	194
Ideal Flow (vphpl)	1800	1900	1900	1900	1700	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.91	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.98	1.00
Satd. Flow (prot)	1710	3610	3610	1615	2946	1470
Flt Permitted	0.15	1.00	1.00	1.00	0.98	1.00
Satd. Flow (perm)	263	3610	3610	1615	2946	1470
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	225	1073	742	123	71	204
RTOR Reduction (vph)	0	0	0	86	51	51
Lane Group Flow (vph)	225	1073	742	37	122	51
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	53.8	53.8	33.8	33.8	57.2	57.2
Effective Green, g (s)	56.3	56.3	36.3	36.3	59.7	59.7
Actuated g/C Ratio	0.47	0.47	0.30	0.30	0.50	0.50
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	340	1693	1092	488	1465	731
v/s Ratio Prot	c0.10	0.30	c0.21		c0.04	
v/s Ratio Perm	0.21			0.02		0.03
v/c Ratio	0.66	0.63	0.68	0.08	0.08	0.07
Uniform Delay, d1	22.9	24.1	36.7	29.9	15.8	15.7
Progression Factor	1.39	1.58	0.70	0.43	1.00	1.00
Incremental Delay, d2	3.3	0.5	1.4	0.1	0.1	0.2
Delay (s)	35.0	38.6	27.2	12.9	15.9	15.9
Level of Service	D	D	C	B	B	B
Approach Delay (s)		38.0	25.2		15.9	
Approach LOS		D	C		B	

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	86	436	30	26	2	423	1010	161	22	1494	425
Future Volume (vph)	239	86	436	30	26	2	423	1010	161	22	1494	425
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1624	1763	1615	1710	3610	1615	1710	5080		1710	3610	1615
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1624	1763	1615	1710	3610	1615	1710	5080		1710	3610	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	252	91	459	32	27	2	445	1063	169	23	1573	447
RTOR Reduction (vph)	0	0	132	0	0	2	0	14	0	0	0	166
Lane Group Flow (vph)	169	174	327	32	27	0	445	1218	0	23	1573	281
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	16.4	16.4	53.8	6.6	6.6	6.6	37.4	74.1		4.9	41.6	58.0
Effective Green, g (s)	18.9	18.9	58.8	9.1	9.1	9.1	39.9	76.6		7.4	44.1	63.0
Actuated g/C Ratio	0.16	0.16	0.49	0.08	0.08	0.08	0.33	0.64		0.06	0.37	0.52
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	255	277	791	129	273	122	568	3242		105	1326	874
v/s Ratio Prot	c0.10	0.10	0.14	c0.02	0.01		c0.26	0.24		0.01	c0.44	0.05
v/s Ratio Perm			0.07			0.00						0.12
v/c Ratio	0.66	0.63	0.41	0.25	0.10	0.00	0.78	0.38		0.22	1.19	0.32
Uniform Delay, d1	47.6	47.3	19.6	52.2	51.6	51.2	36.2	10.3		53.6	37.9	16.3
Progression Factor	1.00	1.00	3.77	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.9	4.1	0.3	1.0	0.2	0.0	7.0	0.3		1.1	91.7	0.2
Delay (s)	53.6	51.5	74.1	53.2	51.8	51.3	43.1	10.7		54.6	129.7	16.5
Level of Service	D	D	E	D	D	D	D	B		D	F	B
Approach Delay (s)		64.9			52.5			19.3			104.1	
Approach LOS		E			D			B			F	

Intersection Summary			
HCM 2000 Control Delay	65.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	268	526	369	0	0	17	1	567	397	630	692	0
Future Volume (veh/h)	268	526	369	0	0	17	1	567	397	630	692	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900				1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	282	554	388				1	597	418	663	728	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	694	799	559				30	1184	501	791	2105	0
Arrive On Green	0.38	0.38	0.38				0.34	0.34	0.34	0.23	0.58	0.00
Sat Flow, veh/h	1810	2084	1459				1	3471	1470	3510	3705	0
Grp Volume(v), veh/h	282	505	437				327	271	418	663	728	0
Grp Sat Flow(s),veh/h/ln	1810	1900	1643				1898	1573	1470	1755	1805	0
Q Serve(g_s), s	13.7	26.8	26.8				0.0	16.5	31.4	21.6	12.6	0.0
Cycle Q Clear(g_c), s	13.7	26.8	26.8				16.4	16.5	31.4	21.6	12.6	0.0
Prop In Lane	1.00		0.89				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	694	729	630				678	537	501	791	2105	0
V/C Ratio(X)	0.41	0.69	0.69				0.48	0.50	0.83	0.84	0.35	0.00
Avail Cap(c_a), veh/h	694	729	630				702	557	521	863	2226	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	1.00	0.72	0.72	0.00
Uniform Delay (d), s/veh	27.0	31.1	31.1				31.5	31.5	36.4	44.4	13.1	0.0
Incr Delay (d2), s/veh	1.8	5.4	6.2				0.5	0.7	10.9	5.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	15.1	13.2				8.7	7.3	14.3	11.1	6.3	0.0
LnGrp Delay(d),s/veh	28.8	36.4	37.3				32.0	32.2	47.3	49.4	13.1	0.0
LnGrp LOS	C	D	D				C	C	D	D	B	
Approach Vol, veh/h		1224						1016			1391	
Approach Delay, s/veh		35.0						38.3			30.4	
Approach LOS		C						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			29.1	42.9		48.0		72.0
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			23.6	33.4		28.8		14.6
Green Ext Time (p_c), s			0.9	5.0		5.2		18.5

Intersection Summary	
HCM 2010 Ctrl Delay	34.2
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.45	2.54	2.74	2.85
Pedestrian Crosswalk LOS	B	B	B	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1224	18	1016	1391
Effct. Green for Bike (s)	48.8	0.0	36.2	67.2
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	813	0	603	1120
Bicycle Delay (s/bike)	21.1	0.0	29.3	11.6
Bicycle Compliance	Fair		Fair	Fair
Bicycle LOS Score	3.96	0.00	2.57	3.58
Bicycle LOS	D		B	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	428	616	652	294	541	0	0	883	352
Future Volume (veh/h)	0	0	0	428	616	652	294	541	0	0	883	352
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				451	676	667	309	569	0	0	929	371
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				767	805	685	371	1959	0	0	1574	519
Arrive On Green				0.42	0.42	0.42	0.20	0.54	0.00	0.00	0.32	0.32
Sat Flow, veh/h				1810	1900	1615	1810	3705	0	0	5168	1615
Grp Volume(v), veh/h				451	676	667	309	569	0	0	929	371
Grp Sat Flow(s),veh/h/ln				1810	1900	1615	1810	1805	0	0	1634	1615
Q Serve(g_s), s				22.9	38.2	48.6	19.6	10.3	0.0	0.0	19.0	24.3
Cycle Q Clear(g_c), s				22.9	38.2	48.6	19.6	10.3	0.0	0.0	19.0	24.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				767	805	685	371	1959	0	0	1574	519
V/C Ratio(X)				0.59	0.84	0.97	0.83	0.29	0.00	0.00	0.59	0.72
Avail Cap(c_a), veh/h				767	805	685	445	2226	0	0	1736	572
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.72	0.72	0.00	0.00	0.34	0.34
Uniform Delay (d), s/veh				26.5	30.9	33.9	45.7	14.9	0.0	0.0	34.1	35.9
Incr Delay (d2), s/veh				3.3	10.2	28.6	8.2	0.1	0.0	0.0	0.2	1.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				12.1	22.2	27.1	10.6	5.1	0.0	0.0	8.6	11.0
LnGrp Delay(d),s/veh				29.8	41.1	62.6	54.0	15.0	0.0	0.0	34.3	37.2
LnGrp LOS				C	D	E	D	B			C	D
Approach Vol, veh/h					1794			878			1300	
Approach Delay, s/veh					46.2			28.7			35.1	
Approach LOS					D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		52.9		67.1			26.6	40.5
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		39.5		71.5			27.0	40.0
Max Q Clear Time (g_c+I1), s		50.6		12.3			21.6	26.3
Green Ext Time (p_c), s		0.0		22.0			0.4	9.7

Intersection Summary	
HCM 2010 Ctrl Delay	38.7
HCM 2010 LOS	D

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	119.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.39	2.54	2.70	2.89
Pedestrian Crosswalk LOS	B	B	B	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	1785	878	1300
Effct. Green for Bike (s)	0.0	49.6	66.4	37.3
Cross Street Width (ft)	75.9	119.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	827	1107	622
Bicycle Delay (s/bike)	0.0	20.7	12.0	28.5
Bicycle Compliance		Fair	Fair	Fair
Bicycle LOS Score	0.00	6.34	2.88	2.74
Bicycle LOS		F	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	805	969	0	0	834	865	264	7	186	0	0	0
Future Volume (veh/h)	805	969	0	0	834	865	264	7	186	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	847	1020	0	0	878	911	342	0	133			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	769	2828	0	0	1772	552	663	0	296			
Arrive On Green	0.43	0.78	0.00	0.00	0.34	0.34	0.18	0.00	0.18			
Sat Flow, veh/h	1810	3705	0	0	5358	1615	3619	0	1615			
Grp Volume(v), veh/h	847	1020	0	0	878	911	342	0	133			
Grp Sat Flow(s),veh/h/ln	1810	1805	0	0	1729	1615	1810	0	1615			
Q Serve(g_s), s	51.0	10.2	0.0	0.0	16.1	41.0	10.2	0.0	8.8			
Cycle Q Clear(g_c), s	51.0	10.2	0.0	0.0	16.1	41.0	10.2	0.0	8.8			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	769	2828	0	0	1772	552	663	0	296			
V/C Ratio(X)	1.10	0.36	0.00	0.00	0.50	1.65	0.52	0.00	0.45			
Avail Cap(c_a), veh/h	769	2828	0	0	1772	552	663	0	296			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.56	0.56	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.5	3.9	0.0	0.0	31.3	39.5	44.2	0.0	43.6			
Incr Delay (d2), s/veh	63.8	0.1	0.0	0.0	0.1	297.5	2.8	0.0	4.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	39.0	5.0	0.0	0.0	7.7	63.8	5.4	0.0	4.3			
LnGrp Delay(d),s/veh	98.3	4.0	0.0	0.0	31.4	337.0	47.0	0.0	48.5			
LnGrp LOS	F	A			C	F	D		D			
Approach Vol, veh/h		1867			1789			475				
Approach Delay, s/veh		46.8			187.0			47.4				
Approach LOS		D			F			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		24.0		96.0			53.0	43.0
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		19.5		91.5			48.5	38.5
Max Q Clear Time (g_c+I1), s		12.2		12.2			53.0	43.0
Green Ext Time (p_c), s		1.0		41.7			0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	107.6
HCM 2010 LOS	F

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	84.3	36.0	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.97	2.96	2.12	2.60
Pedestrian Crosswalk LOS	C	C	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1867	1789	481	0
Effct. Green for Bike (s)	94.0	41.0	22.0	0.0
Cross Street Width (ft)	36.0	25.8	84.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1567	683	367	0
Bicycle Delay (s/bike)	2.8	26.0	40.0	0.0
Bicycle Compliance	Good	Fair	Poor	
Bicycle LOS Score	3.65	2.94	3.64	0.00
Bicycle LOS	D	C	D	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	141.0	73.1	103.0	63.0	97.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.03	2.96	2.75	2.46	2.92
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	940	1610	962	557	783
Effct. Green for Bike (s)	27.0	42.0	29.0	21.5	20.5
Cross Street Width (ft)	97.1	63.0	73.1	141.0	103.0
Through Lanes Number	2	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	450	700	483	358	342
Bicycle Delay (s/bike)	36.0	25.4	34.5	40.4	41.3
Bicycle Compliance	Poor	Fair	Poor	Poor	Poor
Bicycle LOS Score	3.82	3.85	4.27	4.18	4.43
Bicycle LOS	D	D	E	D	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	1232	131	112	1267	49	265	382	122	52	405	102
Future Volume (veh/h)	95	1232	131	112	1267	49	265	382	122	52	405	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	100	1297	138	118	1334	52	279	402	128	55	426	107
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	191	1922	204	178	2067	80	303	1036	326	303	1098	274
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	397	3294	349	378	3543	138	885	2703	851	887	2865	714
Grp Volume(v), veh/h	100	708	727	118	679	707	279	267	263	55	267	266
Grp Sat Flow(s),veh/h/ln	397	1805	1838	378	1805	1876	885	1805	1750	887	1805	1774
Q Serve(g_s), s	27.1	32.3	32.7	37.3	30.1	30.3	32.9	12.8	13.1	5.8	12.8	13.1
Cycle Q Clear(g_c), s	57.3	32.3	32.7	70.0	30.1	30.3	46.0	12.8	13.1	18.8	12.8	13.1
Prop In Lane	1.00		0.19	1.00		0.07	1.00		0.49	1.00		0.40
Lane Grp Cap(c), veh/h	191	1053	1072	178	1053	1094	303	692	671	303	692	680
V/C Ratio(X)	0.52	0.67	0.68	0.66	0.64	0.65	0.92	0.39	0.39	0.18	0.39	0.39
Avail Cap(c_a), veh/h	191	1053	1072	178	1053	1094	303	692	671	303	692	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.58	0.58	0.58	0.26	0.26	0.26	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	17.1	17.2	41.4	16.7	16.7	45.7	26.8	26.9	33.7	26.8	26.8
Incr Delay (d2), s/veh	1.5	1.0	1.0	2.4	0.4	0.3	34.9	1.6	1.7	1.3	1.6	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	16.2	16.9	4.0	15.0	15.6	12.2	6.7	6.6	1.5	6.7	6.7
LnGrp Delay(d),s/veh	37.4	18.1	18.2	43.8	17.1	17.1	80.6	28.4	28.6	35.0	28.4	28.5
LnGrp LOS	D	B	B	D	B	B	F	C	C	D	C	C
Approach Vol, veh/h		1535			1504			809			588	
Approach Delay, s/veh		19.4			19.2			46.4			29.1	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		48.0		72.0		48.0		72.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		43.5		67.5		43.5		67.5
Max Q Clear Time (g_c+I1), s		48.0		59.3		20.8		72.0
Green Ext Time (p_c), s		0.0		7.8		9.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.96	2.90	2.61	2.54
Pedestrian Crosswalk LOS	C	C	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1535	1504	809	588
Effct. Green for Bike (s)	70.0	70.0	46.0	46.0
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1167	1167	767	767
Bicycle Delay (s/bike)	10.4	10.4	22.8	22.8
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	3.74	3.72	3.33	3.15
Bicycle LOS	D	D	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	302	865	292	222	938	249	263	873	136	212	1089	137
Future Volume (veh/h)	302	865	292	222	938	249	263	873	136	212	1089	137
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	318	911	307	234	987	262	277	919	143	223	1146	144
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	356	1199	536	292	1071	479	312	1291	200	281	1249	157
Arrive On Green	0.26	0.44	0.44	0.21	0.39	0.39	0.23	0.38	0.38	0.21	0.36	0.36
Sat Flow, veh/h	1810	3610	1615	1810	3610	1615	1810	4532	703	1810	4668	586
Grp Volume(v), veh/h	318	911	307	234	987	262	277	700	362	223	849	441
Grp Sat Flow(s),veh/h/ln	1810	1805	1615	1810	1805	1615	1810	1729	1776	1810	1729	1797
Q Serve(g_s), s	20.3	25.4	17.0	14.7	31.2	15.0	17.8	20.7	20.8	14.0	28.2	28.2
Cycle Q Clear(g_c), s	20.3	25.4	17.0	14.7	31.2	15.0	17.8	20.7	20.8	14.0	28.2	28.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.40	1.00		0.33
Lane Grp Cap(c), veh/h	356	1199	536	292	1071	479	312	985	506	281	925	481
V/C Ratio(X)	0.89	0.76	0.57	0.80	0.92	0.55	0.89	0.71	0.71	0.79	0.92	0.92
Avail Cap(c_a), veh/h	356	1199	536	320	1071	479	312	985	506	302	925	481
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	0.69	0.69	0.69	0.69	0.69	0.69	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	29.5	27.1	45.3	35.0	30.1	45.1	33.1	33.1	45.8	37.4	37.4
Incr Delay (d2), s/veh	17.7	2.0	1.0	9.1	9.4	0.9	25.0	4.4	8.4	12.8	15.3	25.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	13.0	7.7	8.1	16.9	6.8	11.0	10.5	11.4	8.0	15.3	17.2
LnGrp Delay(d),s/veh	60.8	31.5	28.1	54.4	44.4	31.0	70.2	37.4	41.5	58.6	52.7	62.4
LnGrp LOS	E	C	C	D	D	C	E	D	D	E	D	E
Approach Vol, veh/h		1536			1483			1339			1513	
Approach Delay, s/veh		36.9			43.6			45.3			56.4	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.6	36.2	21.3	41.9	22.7	34.1	25.6	37.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	17.5	30.3	18.7	35.5	18.2	29.6	21.1	33.1
Max Q Clear Time (g_c+I1), s	16.0	22.8	16.7	27.4	19.8	30.2	22.3	33.2
Green Ext Time (p_c), s	0.1	6.5	0.1	6.9	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.5
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.95	2.92	3.04	3.03
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1536	1483	1339	1513
Effct. Green for Bike (s)	38.8	35.6	33.4	32.1
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	647	593	557	535
Bicycle Delay (s/bike)	27.5	29.7	31.2	32.2
Bicycle Compliance	Fair	Fair	Poor	Poor
Bicycle LOS Score	4.13	4.08	3.40	3.50
Bicycle LOS	D	D	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	174	1086	1038	62	165	176
Future Volume (veh/h)	174	1086	1038	62	165	176
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	183	1143	1093	65	235	120
Adj No. of Lanes	1	2	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	327	2010	1625	727	1484	662
Arrive On Green	0.09	0.56	0.45	0.45	0.41	0.41
Sat Flow, veh/h	1810	3705	3705	1615	3619	1615
Grp Volume(v), veh/h	183	1143	1093	65	235	120
Grp Sat Flow(s),veh/h/ln	1810	1805	1805	1615	1810	1615
Q Serve(g_s), s	6.0	24.6	28.7	2.8	4.9	5.7
Cycle Q Clear(g_c), s	6.0	24.6	28.7	2.8	4.9	5.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	327	2010	1625	727	1484	662
V/C Ratio(X)	0.56	0.57	0.67	0.09	0.16	0.18
Avail Cap(c_a), veh/h	466	2557	1895	848	1484	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.52	0.81	0.81	1.00	1.00
Uniform Delay (d), s/veh	19.3	17.3	26.0	18.9	22.3	22.6
Incr Delay (d2), s/veh	0.8	0.1	0.6	0.0	0.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	12.3	14.4	1.2	2.5	6.4
LnGrp Delay(d),s/veh	20.1	17.4	26.6	18.9	22.6	23.2
LnGrp LOS	C	B	C	B	C	C
Approach Vol, veh/h		1326	1158		355	
Approach Delay, s/veh		17.8	26.2		22.8	
Approach LOS		B	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				68.8		51.2	12.8	56.0
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				82.5		28.5	17.5	60.5
Max Q Clear Time (g_c+I1), s				26.6		7.7	8.0	30.7
Green Ext Time (p_c), s				30.7		1.1	0.3	20.9

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.83	2.76	2.44
Pedestrian Crosswalk LOS	C	C	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	1326	1158	359
Effct. Green for Bike (s)	68.9	50.4	47.1
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	1148	840	785
Bicycle Delay (s/bike)	10.9	20.2	22.1
Bicycle Compliance	Fair	Fair	Fair
Bicycle LOS Score	3.57	3.45	2.77
Bicycle LOS	D	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	492	10	649	39	30	3	386	1606	18	10	1392	409
Future Volume (veh/h)	492	10	649	39	30	3	386	1606	18	10	1392	409
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	526	0	683	41	32	3	406	1691	19	11	1465	431
Adj No. of Lanes	2	0	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	618	0	626	107	214	96	392	3541	40	61	1757	1062
Arrive On Green	0.17	0.00	0.17	0.06	0.06	0.06	0.22	0.67	0.67	0.03	0.49	0.49
Sat Flow, veh/h	3619	0	1615	1810	3610	1615	1810	5288	59	1810	3610	1615
Grp Volume(v), veh/h	526	0	683	41	32	3	406	1106	604	11	1465	431
Grp Sat Flow(s),veh/h/ln	1810	0	1615	1810	1805	1615	1810	1729	1890	1810	1805	1615
Q Serve(g_s), s	16.9	0.0	20.5	2.6	1.0	0.2	26.0	18.6	18.6	0.7	42.1	15.0
Cycle Q Clear(g_c), s	16.9	0.0	20.5	2.6	1.0	0.2	26.0	18.6	18.6	0.7	42.1	15.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	618	0	626	107	214	96	392	2316	1265	61	1757	1062
V/C Ratio(X)	0.85	0.00	1.09	0.38	0.15	0.03	1.04	0.48	0.48	0.18	0.83	0.41
Avail Cap(c_a), veh/h	618	0	626	309	617	276	392	2316	1265	113	1757	1062
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	0.0	36.8	54.3	53.6	53.2	47.0	9.6	9.6	56.4	26.6	9.6
Incr Delay (d2), s/veh	9.6	0.0	61.1	2.2	0.3	0.1	54.9	0.7	1.3	1.4	4.8	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	0.0	31.2	1.4	0.5	0.1	18.9	9.0	10.0	0.4	22.1	10.3
LnGrp Delay(d),s/veh	57.9	0.0	97.9	56.6	53.9	53.3	101.9	10.3	10.9	57.8	31.4	10.8
LnGrp LOS	E		F	E	D	D	F	B	B	E	C	B
Approach Vol, veh/h		1209			76			2116			1907	
Approach Delay, s/veh		80.5			55.3			28.1			26.9	
Approach LOS		F			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	82.4		22.5	28.0	60.4		9.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.0	61.0		18.0	23.5	42.5		18.0
Max Q Clear Time (g_c+I1), s	2.7	20.6		22.5	28.0	44.1		4.6
Green Ext Time (p_c), s	0.0	35.9		0.0	0.0	0.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	40.0
HCM 2010 LOS	D

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.73	2.34	3.17	3.19
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1212	76	2116	1907
Effct. Green for Bike (s)	20.5	10.8	82.2	45.4
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	342	180	1370	757
Bicycle Delay (s/bike)	41.3	49.7	6.0	23.2
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	4.68	2.92	3.64	4.07
Bicycle LOS	E	C	D	D

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	526	369	0	0	17	1	567	397	630	692	0
Future Volume (vph)	268	526	369	0	0	17	1	567	397	630	692	0
Ideal Flow (vphpl)	1800	1900	1900	1900	1900	1900	1900	1900	1900	1700	1900	1900
Total Lost time (s)	2.0	2.0			1.5			2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91			1.00			0.91		0.97	0.95	
Frt	1.00	0.94			0.85			0.94		1.00	1.00	
Flt Protected	0.95	1.00			1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1556	3246			0			4867		3133	3610	
Flt Permitted	0.95	1.00			1.00			0.94		0.95	1.00	
Satd. Flow (perm)	1556	3246			0			4573		3133	3610	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	282	554	388	0	0	18	1	597	418	663	728	0
RTOR Reduction (vph)	0	74	0	0	18	0	0	64	0	0	0	0
Lane Group Flow (vph)	254	896	0	0	0	0	0	952	0	663	728	0
Turn Type	Perm	NA					Perm	NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6						4					
Actuated Green, G (s)	46.3	46.3			0.0			33.7		26.5	64.7	
Effective Green, g (s)	48.8	48.8			0.0			36.2		29.0	67.2	
Actuated g/C Ratio	0.41	0.41			0.00			0.30		0.24	0.56	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	632	1320			0			1379		757	2021	
v/s Ratio Prot										c0.21	0.20	
v/s Ratio Perm	0.16	0.28						c0.21				
v/c Ratio	0.40	0.68			0.00			0.69		0.88	0.36	
Uniform Delay, d1	25.2	29.2			60.0			37.0		43.8	14.6	
Progression Factor	1.00	1.00			1.00			1.00		1.51	0.77	
Incremental Delay, d2	1.9	2.8			0.0			1.5		9.3	0.1	
Delay (s)	27.1	32.0			60.0			38.5		75.4	11.3	
Level of Service	C	C			E			D		E	B	
Approach Delay (s)		31.0			60.0			38.5			41.9	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Inland Center Drive & I-215 NB On Ramp/I-215 NB Off Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	428	616	652	294	541	0	0	883	352
Future Volume (vph)	0	0	0	428	616	652	294	541	0	0	883	352
Ideal Flow (vphpl)	1900	1900	1900	1800	1900	1900	1800	1900	1900	1900	1900	1900
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.99	0.85	1.00	1.00			0.96	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1710	1779	1534	1710	3610			6256	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1710	1779	1534	1710	3610			6256	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	451	648	686	309	569	0	0	929	371
RTOR Reduction (vph)	0	0	0	0	3	194	0	0	0	0	64	0
Lane Group Flow (vph)	0	0	0	451	714	423	309	569	0	0	1236	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				47.1	47.1	47.1	24.5	63.9			34.9	
Effective Green, g (s)				49.6	49.6	49.6	27.0	66.4			37.4	
Actuated g/C Ratio				0.41	0.41	0.41	0.22	0.55			0.31	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				706	735	634	384	1997			1949	
v/s Ratio Prot					c0.40		c0.18	0.16			c0.20	
v/s Ratio Perm				0.26		0.28						
v/c Ratio				0.64	0.97	0.67	0.80	0.28			0.63	
Uniform Delay, d1				28.1	34.5	28.5	44.0	14.2			35.4	
Progression Factor				1.00	1.00	1.00	1.45	0.95			0.84	
Incremental Delay, d2				4.4	26.9	5.5	10.0	0.1			0.6	
Delay (s)				32.5	61.4	34.0	74.0	13.5			30.5	
Level of Service				C	E	C	E	B			C	
Approach Delay (s)		0.0			44.6			34.8			30.5	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	805	969	0	0	834	865	264	7	186	0	0	0
Future Volume (vph)	805	969	0	0	834	865	264	7	186	0	0	0
Ideal Flow (vphpl)	1800	1900	1900	1900	1900	1900	1800	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.96	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.97	1.00			
Satd. Flow (prot)	1710	3610			5187	1615	1624	1603	1534			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.97	1.00			
Satd. Flow (perm)	1710	3610			5187	1615	1624	1603	1534			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	847	1020	0	0	878	911	278	7	196	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	232	0	11	123	0	0	0
Lane Group Flow (vph)	847	1020	0	0	878	679	167	152	28	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	48.5	91.5			38.5	38.5	19.5	19.5	19.5			
Effective Green, g (s)	51.0	94.0			41.0	41.0	22.0	22.0	22.0			
Actuated g/C Ratio	0.42	0.78			0.34	0.34	0.18	0.18	0.18			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	726	2827			1772	551	297	293	281			
v/s Ratio Prot	c0.50	0.28			0.17							
v/s Ratio Perm						c0.42	c0.10	0.09	0.02			
v/c Ratio	1.17	0.36			0.50	1.23	0.56	0.52	0.10			
Uniform Delay, d1	34.5	3.9			31.3	39.5	44.6	44.2	40.8			
Progression Factor	1.00	1.00			1.08	1.18	1.00	1.00	1.00			
Incremental Delay, d2	89.5	0.1			0.2	117.0	7.5	6.4	0.7			
Delay (s)	124.0	4.0			34.1	163.8	52.1	50.6	41.5			
Level of Service	F	A			C	F	D	D	D			
Approach Delay (s)		58.5			100.1			48.3			0.0	
Approach LOS		E			F			D			A	

Intersection Summary			
HCM 2000 Control Delay	75.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	120.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	108	686	96	3	149	471	887	22	63	302	384	165
Future Volume (vph)	108	686	96	3	149	471	887	22	63	302	384	165
Ideal Flow (vphpl)	1800	1900	1900	1900	1900	1700	1900	1900	1900	1700	1900	1900
Total Lost time (s)	2.0	2.0	2.0			2.0	2.0			2.0	2.0	2.0
Lane Util. Factor	1.00	*1.00	*1.00			*1.00	*1.00			*1.00	1.00	1.00
Frt	1.00	1.00	0.85			1.00	1.00			1.00	1.00	0.85
Flt Protected	1.00	1.00	1.00			1.00	1.00			1.00	1.00	1.00
Satd. Flow (prot)	1800	3792	1615			3400	3786			3400	1900	1615
Flt Permitted	1.00	1.00	1.00			1.00	1.00			1.00	1.00	1.00
Satd. Flow (perm)	1800	3792	1615			3400	3786			3400	1900	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	114	722	101	3	157	496	934	23	66	318	404	174
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	51
Lane Group Flow (vph)	114	732	94	0	0	653	957	0	0	384	404	123
Turn Type	Prot	NA	Prot		Prot	Prot	NA		Prot	Prot	NA	pm+ov
Protected Phases	7	4	4		3	3	8		5	5	2	3
Permitted Phases												2
Actuated Green, G (s)	8.5	24.5	24.5			23.5	39.5			12.5	26.5	50.0
Effective Green, g (s)	11.0	27.0	27.0			26.0	42.0			15.0	29.0	55.0
Actuated g/C Ratio	0.09	0.22	0.22			0.22	0.35			0.12	0.24	0.46
Clearance Time (s)	4.5	4.5	4.5			4.5	4.5			4.5	4.5	4.5
Lane Grp Cap (vph)	165	853	363			736	1325			425	459	767
v/s Ratio Prot	0.06	c0.19	0.06			c0.19	0.25			c0.11	c0.21	0.03
v/s Ratio Perm												0.04
v/c Ratio	0.69	0.86	0.26			0.89	0.72			0.90	0.88	0.16
Uniform Delay, d1	52.9	44.7	38.3			45.6	33.9			51.8	43.8	19.0
Progression Factor	0.94	0.98	0.98			0.64	1.04			1.00	1.00	1.00
Incremental Delay, d2	20.2	10.4	1.6			10.6	2.3			25.1	20.8	0.4
Delay (s)	70.1	54.0	39.3			39.8	37.5			76.9	64.6	19.4
Level of Service	E	D	D			D	D			E	E	B
Approach Delay (s)		54.5					38.4				61.4	
Approach LOS		D					D				E	

Intersection Summary			
HCM 2000 Control Delay	50.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	39	316	92	82	17	167	431	128
Future Volume (vph)	39	316	92	82	17	167	431	128
Ideal Flow (vphpl)	1800	1900	1900	1900	1700	1700	1900	1900
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	
Lane Util. Factor	1.00	*1.00			1.00	1.00	*1.00	
Frt	1.00	0.95			1.00	1.00	0.85	
Flt Protected	1.00	1.00			1.00	1.00	1.00	
Satd. Flow (prot)	1800	3598			1700	1700	3230	
Flt Permitted	1.00	1.00			1.00	1.00	1.00	
Satd. Flow (perm)	1800	3598			1700	1700	3230	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	333	97	86	18	176	454	135
RTOR Reduction (vph)	0	15	0	0	0	0	181	0
Lane Group Flow (vph)	41	501	0	0	18	176	408	0
Turn Type	Prot	NA			Prot	Prot	Perm	
Protected Phases	1	6			9	9		
Permitted Phases							9	
Actuated Green, G (s)	5.0	19.0			18.0	18.0	18.0	
Effective Green, g (s)	7.5	21.5			20.5	20.5	20.5	
Actuated g/C Ratio	0.06	0.18			0.17	0.17	0.17	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	112	644			290	290	551	
v/s Ratio Prot	0.02	0.14			0.01	0.10		
v/s Ratio Perm							c0.13	
v/c Ratio	0.37	0.78			0.06	0.61	0.74	
Uniform Delay, d1	54.0	47.0			41.7	46.0	47.2	
Progression Factor	1.00	1.00			1.04	1.00	0.97	
Incremental Delay, d2	9.0	9.0			0.4	7.8	7.5	
Delay (s)	63.0	56.0			43.9	53.7	53.4	
Level of Service	E	E			D	D	D	
Approach Delay (s)		56.5				53.2		
Approach LOS		E				D		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	1232	131	112	1267	49	265	382	122	52	405	102
Future Volume (vph)	95	1232	131	112	1267	49	265	382	122	52	405	102
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.99		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1710	3558		1710	3590		1710	3479		1710	3501	
Flt Permitted	0.11	1.00		0.09	1.00		0.34	1.00		0.34	1.00	
Satd. Flow (perm)	190	3558		171	3590		610	3479		613	3501	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	100	1297	138	118	1334	52	279	402	128	55	426	107
RTOR Reduction (vph)	0	7	0	0	3	0	0	25	0	0	19	0
Lane Group Flow (vph)	100	1428	0	118	1384	0	279	505	0	55	515	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	67.5	67.5		67.5	67.5		43.5	43.5		43.5	43.5	
Effective Green, g (s)	70.0	70.0		70.0	70.0		46.0	46.0		46.0	46.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.38	0.38		0.38	0.38	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	110	2075		99	2094		233	1333		234	1342	
v/s Ratio Prot		0.40			0.39			0.15			0.15	
v/s Ratio Perm	0.53			c0.69			c0.46			0.09		
v/c Ratio	0.91	0.69		1.19	0.66		1.20	0.38		0.24	0.38	
Uniform Delay, d1	22.2	17.4		25.0	16.9		37.0	26.7		25.1	26.7	
Progression Factor	0.66	0.54		1.59	1.63		1.00	1.00		1.00	1.00	
Incremental Delay, d2	46.8	0.7		123.4	0.4		122.8	0.8		2.3	0.8	
Delay (s)	61.4	10.1		163.1	28.1		159.8	27.5		27.4	27.6	
Level of Service	E	B		F	C		F	C		C	C	
Approach Delay (s)		13.4			38.7			73.1			27.6	
Approach LOS		B			D			E			C	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	865	292	222	938	249	263	873	136	212	1089	137
Future Volume (vph)	302	865	292	222	938	249	263	873	136	212	1089	137
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1710	3610	1615	1710	3610	1615	1710	5082		1710	5100	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1710	3610	1615	1710	3610	1615	1710	5082		1710	5100	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	318	911	307	234	987	262	277	919	143	223	1146	144
RTOR Reduction (vph)	0	0	208	0	0	67	0	17	0	0	13	0
Lane Group Flow (vph)	318	911	99	234	987	195	277	1045	0	223	1277	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	21.1	36.3	36.3	17.9	33.1	33.1	18.2	30.9		16.9	29.6	
Effective Green, g (s)	23.6	38.8	38.8	20.4	35.6	35.6	20.7	33.4		19.4	32.1	
Actuated g/C Ratio	0.20	0.32	0.32	0.17	0.30	0.30	0.17	0.28		0.16	0.27	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	336	1167	522	290	1070	479	294	1414		276	1364	
v/s Ratio Prot	c0.19	0.25		0.14	c0.27		c0.16	0.21		0.13	c0.25	
v/s Ratio Perm			0.06			0.12						
v/c Ratio	0.95	0.78	0.19	0.81	0.92	0.41	0.94	0.74		0.81	0.94	
Uniform Delay, d1	47.6	36.7	29.3	47.9	40.9	33.8	49.1	39.3		48.5	42.9	
Progression Factor	0.66	1.06	4.24	0.78	1.47	1.83	1.00	1.00		1.00	1.00	
Incremental Delay, d2	29.9	2.7	0.1	13.8	11.8	0.5	37.1	3.5		15.8	13.2	
Delay (s)	61.4	41.6	124.2	51.3	71.9	62.4	86.2	42.8		64.3	56.2	
Level of Service	E	D	F	D	E	E	F	D		E	E	
Approach Delay (s)		62.2			67.0			51.8			57.4	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	59.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	174	1086	1038	62	165	176
Future Volume (vph)	174	1086	1038	62	165	176
Ideal Flow (vphpl)	1800	1900	1900	1900	1700	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.96	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.97	1.00
Satd. Flow (prot)	1710	3610	3610	1615	3046	1470
Flt Permitted	0.10	1.00	1.00	1.00	0.97	1.00
Satd. Flow (perm)	177	3610	3610	1615	3046	1470
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	183	1143	1093	65	174	185
RTOR Reduction (vph)	0	0	0	38	32	69
Lane Group Flow (vph)	183	1143	1093	27	214	44
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	66.5	66.5	47.9	47.9	44.5	44.5
Effective Green, g (s)	69.0	69.0	50.4	50.4	47.0	47.0
Actuated g/C Ratio	0.58	0.58	0.42	0.42	0.39	0.39
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	2075	1516	678	1193	575
v/s Ratio Prot	c0.08	0.32	c0.30		c0.07	
v/s Ratio Perm	0.25			0.02		0.03
v/c Ratio	0.58	0.55	0.72	0.04	0.18	0.08
Uniform Delay, d1	20.3	15.9	29.0	20.5	23.9	22.9
Progression Factor	1.14	1.97	0.89	0.47	1.00	1.00
Incremental Delay, d2	1.8	0.2	1.6	0.0	0.3	0.3
Delay (s)	25.0	31.4	27.3	9.6	24.2	23.2
Level of Service	C	C	C	A	C	C
Approach Delay (s)		30.5	26.3		23.9	
Approach LOS		C	C		C	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	492	10	649	39	30	3	386	1606	18	10	1392	409
Future Volume (vph)	492	10	649	39	30	3	386	1606	18	10	1392	409
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1624	1722	1615	1710	3610	1615	1710	5178		1710	3610	1615
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1624	1722	1615	1710	3610	1615	1710	5178		1710	3610	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	518	11	683	41	32	3	406	1691	19	11	1465	431
RTOR Reduction (vph)	0	0	126	0	0	3	0	1	0	0	0	166
Lane Group Flow (vph)	264	265	557	41	32	0	406	1709	0	11	1465	265
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	18.0	18.0	52.8	7.2	7.2	7.2	34.8	75.2		1.6	42.0	60.0
Effective Green, g (s)	20.5	20.5	57.8	9.7	9.7	9.7	37.3	77.7		4.1	44.5	65.0
Actuated g/C Ratio	0.17	0.17	0.48	0.08	0.08	0.08	0.31	0.65		0.03	0.37	0.54
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	277	294	777	138	291	130	531	3352		58	1338	901
v/s Ratio Prot	c0.16	0.15	0.22	c0.02	0.01		c0.24	0.33		0.01	c0.41	0.05
v/s Ratio Perm			0.12			0.00						0.11
v/c Ratio	0.95	0.90	0.72	0.30	0.11	0.00	0.76	0.51		0.19	1.09	0.29
Uniform Delay, d1	49.3	48.8	24.6	51.9	51.1	50.7	37.4	11.1		56.3	37.8	15.0
Progression Factor	1.02	1.03	2.48	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	39.3	27.1	2.9	1.2	0.2	0.0	6.5	0.6		1.6	54.8	0.2
Delay (s)	89.8	77.1	64.0	53.1	51.3	50.7	43.9	11.7		57.9	92.6	15.2
Level of Service	F	E	E	D	D	D	D	B		E	F	B
Approach Delay (s)		72.5			52.3			17.9			74.9	
Approach LOS		E			D			B			E	

Intersection Summary			
HCM 2000 Control Delay	51.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	420	405	0	0	34	0	513	395	458	673	0
Future Volume (veh/h)	205	420	405	0	0	34	0	513	395	458	673	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	216	442	426				0	540	416	482	708	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	801	841	715				0	1138	531	627	1892	0
Arrive On Green	0.44	0.44	0.44				0.00	0.33	0.33	0.18	0.52	0.00
Sat Flow, veh/h	1810	1900	1615				0	3629	1615	3510	3705	0
Grp Volume(v), veh/h	216	442	426				0	540	416	482	708	0
Grp Sat Flow(s),veh/h/ln	1810	1900	1615				0	1729	1615	1755	1805	0
Q Serve(g_s), s	9.1	20.3	24.0				0.0	14.9	27.9	15.7	13.9	0.0
Cycle Q Clear(g_c), s	9.1	20.3	24.0				0.0	14.9	27.9	15.7	13.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	801	841	715				0	1138	531	627	1892	0
V/C Ratio(X)	0.27	0.53	0.60				0.00	0.47	0.78	0.77	0.37	0.00
Avail Cap(c_a), veh/h	801	841	715				0	1225	572	863	2226	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.73	0.73	0.00
Uniform Delay (d), s/veh	21.2	24.3	25.3				0.0	32.0	36.4	46.9	16.9	0.0
Incr Delay (d2), s/veh	0.8	2.3	3.6				0.0	0.3	6.6	2.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	11.2	11.4				0.0	7.2	13.4	7.8	6.9	0.0
LnGrp Delay(d),s/veh	22.0	26.7	29.0				0.0	32.3	42.9	49.0	17.0	0.0
LnGrp LOS	C	C	C					C	D	D	B	
Approach Vol, veh/h		1084						956			1190	
Approach Delay, s/veh		26.6						36.9			30.0	
Approach LOS		C						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			23.4	41.5		55.1		64.9
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			17.7	29.9		26.0		15.9
Green Ext Time (p_c), s			1.2	7.0		5.4		18.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.42	2.41	2.73	2.80
Pedestrian Crosswalk LOS	B	B	B	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1084	36	956	1190
Effct. Green for Bike (s)	56.7	0.0	31.7	59.3
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	945	0	528	988
Bicycle Delay (s/bike)	16.7	0.0	32.5	15.4
Bicycle Compliance	Fair		Poor	Fair
Bicycle LOS Score	3.84	0.00	2.53	3.41
Bicycle LOS	D		B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	499	670	977	297	442	0	0	643	91
Future Volume (veh/h)	0	0	0	499	670	977	297	442	0	0	643	91
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				525	947	866	313	465	0	0	677	96
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1051	1103	938	370	1393	0	0	964	134
Arrive On Green				0.58	0.58	0.58	0.20	0.39	0.00	0.00	0.16	0.16
Sat Flow, veh/h				1810	1900	1615	1810	3705	0	0	6115	810
Grp Volume(v), veh/h				525	947	866	313	465	0	0	565	208
Grp Sat Flow(s),veh/h/ln				1810	1900	1615	1810	1805	0	0	1634	1757
Q Serve(g_s), s				20.6	50.0	58.2	20.0	10.9	0.0	0.0	13.1	13.5
Cycle Q Clear(g_c), s				20.6	50.0	58.2	20.0	10.9	0.0	0.0	13.1	13.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.46
Lane Grp Cap(c), veh/h				1051	1103	938	370	1393	0	0	808	290
V/C Ratio(X)				0.50	0.86	0.92	0.85	0.33	0.00	0.00	0.70	0.72
Avail Cap(c_a), veh/h				1051	1103	938	377	1432	0	0	842	302
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.75	0.75	0.00	0.00	0.53	0.53
Uniform Delay (d), s/veh				14.9	21.0	22.7	45.9	26.0	0.0	0.0	47.3	47.5
Incr Delay (d2), s/veh				1.7	8.7	15.8	12.6	0.1	0.0	0.0	1.3	4.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.7	28.7	29.9	11.3	5.4	0.0	0.0	6.0	6.9
LnGrp Delay(d),s/veh				16.6	29.7	38.6	58.5	26.1	0.0	0.0	48.6	51.7
LnGrp LOS				B	C	D	E	C			D	D
Approach Vol, veh/h					2338			778			773	
Approach Delay, s/veh					30.0			39.1			49.4	
Approach LOS					C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		71.7		48.3			26.5	21.8
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		65.9		45.1			22.5	18.1
Max Q Clear Time (g_c+I1), s		60.2		12.9			22.0	15.5
Green Ext Time (p_c), s		4.8		10.0			0.1	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	35.7
HCM 2010 LOS	D

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	119.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.32	2.70	2.64	2.84
Pedestrian Crosswalk LOS	B	B	B	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	2258	778	773
Effct. Green for Bike (s)	0.0	69.1	46.9	20.3
Cross Street Width (ft)	75.9	119.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	1152	782	338
Bicycle Delay (s/bike)	0.0	10.8	22.3	41.4
Bicycle Compliance		Fair	Fair	Poor
Bicycle LOS Score	0.00	7.12	2.80	2.52
Bicycle LOS		F	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	671	1430	0	0	452	291	293	3	114	0	0	0
Future Volume (veh/h)	671	1430	0	0	452	291	293	3	114	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	706	1505	0	0	476	306	347	0	81			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	770	2228	0	0	908	283	1265	0	564			
Arrive On Green	0.43	0.62	0.00	0.00	0.18	0.18	0.35	0.00	0.35			
Sat Flow, veh/h	1810	3705	0	0	5358	1615	3619	0	1615			
Grp Volume(v), veh/h	706	1505	0	0	476	306	347	0	81			
Grp Sat Flow(s),veh/h/ln	1810	1805	0	0	1729	1615	1810	0	1615			
Q Serve(g_s), s	44.1	32.8	0.0	0.0	10.0	21.0	8.3	0.0	4.1			
Cycle Q Clear(g_c), s	44.1	32.8	0.0	0.0	10.0	21.0	8.3	0.0	4.1			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	770	2228	0	0	908	283	1265	0	564			
V/C Ratio(X)	0.92	0.68	0.00	0.00	0.52	1.08	0.27	0.00	0.14			
Avail Cap(c_a), veh/h	1056	2798	0	0	908	283	1265	0	564			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.82	0.82	1.00	0.00	1.00			
Uniform Delay (d), s/veh	32.5	15.1	0.0	0.0	45.0	49.5	28.1	0.0	26.7			
Incr Delay (d2), s/veh	9.8	0.5	0.0	0.0	0.5	72.4	0.5	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	24.1	16.4	0.0	0.0	4.8	15.0	4.2	0.0	1.9			
LnGrp Delay(d),s/veh	42.3	15.5	0.0	0.0	45.4	121.9	28.6	0.0	27.3			
LnGrp LOS	D	B			D	F	C		C			
Approach Vol, veh/h		2211			782			428				
Approach Delay, s/veh		24.1			75.3			28.4				
Approach LOS		C			E			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		43.9		76.1			53.1	23.0
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		20.5		90.5			67.5	18.5
Max Q Clear Time (g_c+I1), s		10.3		34.8			46.1	23.0
Green Ext Time (p_c), s		1.1		29.3			2.4	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	36.3
HCM 2010 LOS	D

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	84.3	36.0	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.96	2.87	2.10	2.23
Pedestrian Crosswalk LOS	C	C	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	2211	782	431	0
Effct. Green for Bike (s)	83.6	20.2	32.4	0.0
Cross Street Width (ft)	36.0	25.8	84.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1393	337	540	0
Bicycle Delay (s/bike)	5.5	41.5	32.0	0.0
Bicycle Compliance	Good	Poor	Poor	
Bicycle LOS Score	3.93	2.38	3.56	0.00
Bicycle LOS	D	B	D	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	141.0	73.1	103.0	63.0	97.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.99	2.92	2.63	2.41	2.90
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	1171	1186	444	464	742
Effct. Green for Bike (s)	38.0	40.5	21.0	21.5	22.0
Cross Street Width (ft)	97.1	63.0	73.1	141.0	103.0
Through Lanes Number	2	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	633	675	350	358	367
Bicycle Delay (s/bike)	28.0	26.3	40.8	40.4	40.0
Bicycle Compliance	Fair	Fair	Poor	Poor	Poor
Bicycle LOS Score	4.01	3.50	3.41	4.10	4.36
Bicycle LOS	D	D	C	D	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	1518	314	114	930	41	102	231	76	59	234	55
Future Volume (veh/h)	92	1518	314	114	930	41	102	231	76	59	234	55
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	97	1598	331	120	979	43	107	243	80	62	246	58
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	297	1749	351	72	2055	90	415	1031	331	404	1116	258
Arrive On Green	0.39	0.39	0.39	0.58	0.58	0.58	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	561	2998	601	234	3523	155	1092	2689	864	1074	2912	674
Grp Volume(v), veh/h	97	941	988	120	502	520	107	161	162	62	151	153
Grp Sat Flow(s),veh/h/ln	561	1805	1794	234	1805	1873	1092	1805	1748	1074	1805	1781
Q Serve(g_s), s	16.8	58.5	63.8	6.2	19.2	19.2	8.8	7.3	7.6	5.0	6.7	7.0
Cycle Q Clear(g_c), s	36.1	58.5	63.8	70.0	19.2	19.2	15.8	7.3	7.6	12.6	6.7	7.0
Prop In Lane	1.00		0.33	1.00		0.08	1.00		0.49	1.00		0.38
Lane Grp Cap(c), veh/h	297	1053	1046	72	1053	1092	415	692	670	404	692	683
V/C Ratio(X)	0.33	0.89	0.94	1.67	0.48	0.48	0.26	0.23	0.24	0.15	0.22	0.22
Avail Cap(c_a), veh/h	297	1053	1046	72	1053	1092	415	692	670	404	692	683
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.65	0.65	0.65	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	33.1	34.7	59.5	14.4	14.4	30.3	25.1	25.1	29.4	24.9	25.0
Incr Delay (d2), s/veh	0.4	6.8	11.8	342.9	0.3	0.3	1.5	0.8	0.9	0.8	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	31.2	35.1	9.2	9.6	9.9	2.8	3.8	3.8	1.6	3.5	3.6
LnGrp Delay(d),s/veh	34.4	39.9	46.4	402.4	14.7	14.7	31.8	25.8	26.0	30.2	25.6	25.7
LnGrp LOS	C	D	D	F	B	B	C	C	C	C	C	C
Approach Vol, veh/h		2026			1142			430			366	
Approach Delay, s/veh		42.8			55.4			27.4			26.4	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		48.0		72.0		48.0		72.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		43.5		67.5		43.5		67.5
Max Q Clear Time (g_c+I1), s		17.8		65.8		14.6		72.0
Green Ext Time (p_c), s		4.7		1.7		4.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	43.3
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.94	2.88	2.54	2.47
Pedestrian Crosswalk LOS	C	C	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	2026	1142	430	366
Effct. Green for Bike (s)	70.0	70.0	46.0	46.0
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1167	1167	767	767
Bicycle Delay (s/bike)	10.4	10.4	22.8	22.8
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	4.15	3.42	3.01	2.96
Bicycle LOS	D	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	1011	221	171	677	107	193	772	143	213	763	243
Future Volume (veh/h)	159	1011	221	171	677	107	193	772	143	213	763	243
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	167	1064	233	180	713	113	203	813	151	224	803	256
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	226	1339	599	239	1364	610	261	1209	223	282	1116	353
Arrive On Green	0.17	0.49	0.49	0.18	0.50	0.50	0.19	0.37	0.37	0.21	0.38	0.38
Sat Flow, veh/h	1810	3610	1615	1810	3610	1615	1810	4403	812	1810	3905	1235
Grp Volume(v), veh/h	167	1064	233	180	713	113	203	637	327	224	710	349
Grp Sat Flow(s),veh/h/ln	1810	1805	1615	1810	1805	1615	1810	1729	1757	1810	1729	1682
Q Serve(g_s), s	10.5	29.5	10.9	11.3	16.0	4.6	12.8	18.6	18.8	14.1	21.0	21.3
Cycle Q Clear(g_c), s	10.5	29.5	10.9	11.3	16.0	4.6	12.8	18.6	18.8	14.1	21.0	21.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		0.73
Lane Grp Cap(c), veh/h	226	1339	599	239	1364	610	261	950	482	282	989	481
V/C Ratio(X)	0.74	0.79	0.39	0.75	0.52	0.19	0.78	0.67	0.68	0.79	0.72	0.72
Avail Cap(c_a), veh/h	238	1450	649	252	1477	661	280	950	482	303	989	481
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	0.29	0.29	0.29	0.76	0.76	0.76	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	26.6	21.9	47.6	22.5	19.7	46.6	33.5	33.6	45.8	33.1	33.2
Incr Delay (d2), s/veh	3.4	0.9	0.1	8.9	0.2	0.1	12.1	3.8	7.4	12.8	4.5	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	14.8	4.8	6.3	8.0	2.1	7.3	9.4	10.1	8.1	10.6	11.0
LnGrp Delay(d),s/veh	51.5	27.5	22.0	56.5	22.8	19.8	58.7	37.3	41.0	58.6	37.6	42.3
LnGrp LOS	D	C	C	E	C	B	E	D	D	E	D	D
Approach Vol, veh/h		1464			1006			1167			1283	
Approach Delay, s/veh		29.3			28.5			42.1			42.5	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.7	35.0	17.8	46.5	19.3	36.3	17.0	47.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	17.6	24.5	14.2	45.7	16.1	26.0	13.3	46.6
Max Q Clear Time (g_c+I1), s	16.1	20.8	13.3	31.5	14.8	23.3	12.5	18.0
Green Ext Time (p_c), s	0.1	3.2	0.0	10.5	0.1	2.4	0.0	17.3

Intersection Summary	
HCM 2010 Ctrl Delay	35.6
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.90	2.87	2.95	2.95
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1464	1006	1167	1283
Effct. Green for Bike (s)	45.6	46.5	30.5	31.9
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	760	775	508	532
Bicycle Delay (s/bike)	23.1	22.5	33.4	32.3
Bicycle Compliance	Fair	Fair	Poor	Poor
Bicycle LOS Score	4.07	3.69	3.30	3.37
Bicycle LOS	D	D	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	258	1019	705	131	73	215
Future Volume (veh/h)	258	1019	705	131	73	215
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	272	1073	742	138	77	226
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	419	1837	1317	589	828	1478
Arrive On Green	0.13	0.51	0.36	0.36	0.46	0.46
Sat Flow, veh/h	1810	3705	3705	1615	1810	3230
Grp Volume(v), veh/h	272	1073	742	138	77	226
Grp Sat Flow(s),veh/h/ln	1810	1805	1805	1615	1810	1615
Q Serve(g_s), s	10.4	24.9	19.7	7.1	2.9	4.9
Cycle Q Clear(g_c), s	10.4	24.9	19.7	7.1	2.9	4.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	419	1837	1317	589	828	1478
V/C Ratio(X)	0.65	0.58	0.56	0.23	0.09	0.15
Avail Cap(c_a), veh/h	490	2557	1895	848	828	1478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.53	0.53	0.76	0.76	1.00	1.00
Uniform Delay (d), s/veh	20.4	20.6	30.5	26.5	18.4	19.0
Incr Delay (d2), s/veh	1.3	0.2	0.3	0.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	12.4	9.8	3.2	1.5	5.8
LnGrp Delay(d),s/veh	21.7	20.7	30.7	26.6	18.7	19.2
LnGrp LOS	C	C	C	C	B	B
Approach Vol, veh/h		1345	880		303	
Approach Delay, s/veh		20.9	30.1		19.1	
Approach LOS		C	C		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				63.1		56.9	17.3	45.8
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				82.5		28.5	17.5	60.5
Max Q Clear Time (g_c+I1), s				26.9		6.9	12.4	21.7
Green Ext Time (p_c), s				22.7		1.0	0.4	19.6

Intersection Summary	
HCM 2010 Ctrl Delay	23.9
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.77	2.65	2.46
Pedestrian Crosswalk LOS	C	B	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	1345	880	303
Effct. Green for Bike (s)	57.5	36.3	58.5
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	958	605	975
Bicycle Delay (s/bike)	16.3	29.2	15.8
Bicycle Compliance	Fair	Fair	Fair
Bicycle LOS Score	3.59	3.22	2.73
Bicycle LOS	D	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	86	442	30	26	2	436	1010	161	22	1494	426
Future Volume (veh/h)	240	86	442	30	26	2	436	1010	161	22	1494	426
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	172	204	465	32	27	2	459	1063	169	23	1573	448
Adj No. of Lanes	1	1	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	309	325	626	103	206	92	392	2990	475	78	1765	1065
Arrive On Green	0.17	0.17	0.17	0.06	0.06	0.06	0.22	0.66	0.66	0.04	0.49	0.49
Sat Flow, veh/h	1810	1900	1615	1810	3610	1615	1810	4515	717	1810	3610	1615
Grp Volume(v), veh/h	172	204	465	32	27	2	459	814	418	23	1573	448
Grp Sat Flow(s),veh/h/ln	1810	1900	1615	1810	1805	1615	1810	1729	1773	1810	1805	1615
Q Serve(g_s), s	10.5	12.0	20.5	2.0	0.9	0.1	26.0	12.5	12.5	1.5	47.4	15.7
Cycle Q Clear(g_c), s	10.5	12.0	20.5	2.0	0.9	0.1	26.0	12.5	12.5	1.5	47.4	15.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.40	1.00		1.00
Lane Grp Cap(c), veh/h	309	325	626	103	206	92	392	2290	1175	78	1765	1065
V/C Ratio(X)	0.56	0.63	0.74	0.31	0.13	0.02	1.17	0.36	0.36	0.29	0.89	0.42
Avail Cap(c_a), veh/h	309	325	626	309	617	276	392	2290	1175	113	1765	1065
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	46.2	31.6	54.3	53.8	53.4	47.0	8.9	9.0	55.6	27.8	9.6
Incr Delay (d2), s/veh	1.8	3.2	3.9	1.7	0.3	0.1	100.8	0.4	0.8	2.1	7.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	6.6	13.9	1.1	0.4	0.1	23.9	6.0	6.3	0.8	25.4	10.8
LnGrp Delay(d),s/veh	47.4	49.4	35.5	56.0	54.0	53.5	147.8	9.4	9.8	57.7	35.1	10.8
LnGrp LOS	D	D	D	E	D	D	F	A	A	E	D	B
Approach Vol, veh/h		841			61			1691			2044	
Approach Delay, s/veh		41.3			55.0			47.1			30.0	
Approach LOS		D			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.2	81.5		22.5	28.0	60.7		8.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.0	61.0		18.0	23.5	42.5		18.0
Max Q Clear Time (g_c+I1), s	2.5	14.5		22.5	28.0	49.4		4.0
Green Ext Time (p_c), s	0.0	37.9		0.0	0.0	0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	38.6
HCM 2010 LOS	D

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.66	2.39	3.09	3.08
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	809	61	1691	2044
Effct. Green for Bike (s)	18.9	10.2	79.3	45.0
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	315	170	1322	750
Bicycle Delay (s/bike)	42.6	50.2	6.9	23.4
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	4.01	2.91	3.41	4.18
Bicycle LOS	D	C	C	D

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	0	331	20	1	261
Future Vol, veh/h	10	0	331	20	1	261
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	0	348	21	1	275

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	498	185	0	0	369	0
Stage 1	359	-	-	-	-	-
Stage 2	139	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	507	832	-	-	1201	-
Stage 1	683	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	506	832	-	-	1201	-
Mov Cap-2 Maneuver	571	-	-	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	878	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	571	1201	-
HCM Lane V/C Ratio	-	-	0.018	0.001	-
HCM Control Delay (s)	-	-	11.4	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	113.2
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	592
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.96
Prob of Blocked Lane	0.54
Delay for adq Gap	118.45
Avg Ped Delay (s)	113.25

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	113.2
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	592
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.96
Prob of Blocked Lane	0.54
Delay for adq Gap	118.45
Avg Ped Delay (s)	113.25

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	0	20	10	0	10
Future Vol, veh/h	5	0	20	10	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	0	21	11	0	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	31	16	0	0	32	0
Stage 1	26	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	985	1066	-	-	1593	-
Stage 1	999	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	985	1066	-	-	1593	-
Mov Cap-2 Maneuver	908	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	1023	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	908	1593	-
HCM Lane V/C Ratio	-	-	0.006	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	1.6
Level of Service	A

Crosswalk	
Length (ft)	57
Lanes Crossed	4
Veh Vol Crossed	30
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.29
Prob of Delayed X-ing	0.15
Prob of Blocked Lane	0.04
Delay for adq Gap	11.02
Avg Ped Delay (s)	1.64

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	1.6
Level of Service	A

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	30
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.15
Prob of Blocked Lane	0.04
Delay for adq Gap	10.84
Avg Ped Delay (s)	1.59

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	0	30	29	0	14
Future Vol, veh/h	14	0	30	29	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	15	0	32	31	0	15

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	54	31	0	0	62	0
Stage 1	47	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	953	1043	-	-	1554	-
Stage 1	976	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	953	1043	-	-	1554	-
Mov Cap-2 Maneuver	886	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	886	1554	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	-	-	9.1	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	3.4
Level of Service	A

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	44
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	0.24
Prob of Blocked Lane	0.07
Delay for adq Gap	14.08
Avg Ped Delay (s)	3.38

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	4.4
Level of Service	A

Crosswalk	
Length (ft)	79
Lanes Crossed	4
Veh Vol Crossed	44
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	25.57
Prob of Delayed X-ing	0.27
Prob of Blocked Lane	0.08
Delay for adq Gap	16.57
Avg Ped Delay (s)	4.45

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	420	405	0	0	34	0	513	395	458	673	0
Future Volume (vph)	205	420	405	0	0	34	0	513	395	458	673	0
Ideal Flow (vphpl)	1800	1900	1900	1900	1900	1900	1900	1900	1900	1700	1900	1900
Total Lost time (s)	2.0	2.0			1.5			2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91			1.00			0.91		0.97	0.95	
Frt	1.00	0.93			0.85			0.93		1.00	1.00	
Flt Protected	0.95	1.00			1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1556	3206			0			4848		3133	3610	
Flt Permitted	0.95	1.00			1.00			1.00		0.95	1.00	
Satd. Flow (perm)	1556	3206			0			4848		3133	3610	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	216	442	426	0	0	36	0	540	416	482	708	0
RTOR Reduction (vph)	0	113	0	0	36	0	0	116	0	0	0	0
Lane Group Flow (vph)	194	777	0	0	0	0	0	840	0	482	708	0
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6											
Actuated Green, G (s)	54.2	54.2			0.0			29.2		23.1	56.8	
Effective Green, g (s)	56.7	56.7			0.0			31.7		25.6	59.3	
Actuated g/C Ratio	0.47	0.47			0.00			0.26		0.21	0.49	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	735	1514			0			1280		668	1783	
v/s Ratio Prot								c0.17		c0.15	0.20	
v/s Ratio Perm	0.12	0.24										
v/c Ratio	0.26	0.51			0.00			0.66		0.72	0.40	
Uniform Delay, d1	19.1	22.0			60.0			39.3		43.9	19.1	
Progression Factor	1.00	1.00			1.00			1.00		1.06	2.03	
Incremental Delay, d2	0.9	1.2			0.0			1.2		3.0	0.1	
Delay (s)	20.0	23.3			60.0			40.5		49.8	39.0	
Level of Service	B	C			E			D		D	D	
Approach Delay (s)		22.7			60.0			40.5			43.3	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	499	670	977	297	442	0	0	643	91
Future Volume (vph)	0	0	0	499	670	977	297	442	0	0	643	91
Ideal Flow (vphpl)	1900	1900	1900	1800	1900	1900	1800	1900	1900	1900	1900	1900
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.96	0.85	1.00	1.00			0.98	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1710	1742	1534	1710	3610			6414	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1710	1742	1534	1710	3610			6414	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	525	705	1028	313	465	0	0	677	96
RTOR Reduction (vph)	0	0	0	0	9	100	0	0	0	0	22	0
Lane Group Flow (vph)	0	0	0	525	912	712	313	465	0	0	751	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				66.6	66.6	66.6	22.1	44.4			17.8	
Effective Green, g (s)				69.1	69.1	69.1	24.6	46.9			20.3	
Actuated g/C Ratio				0.58	0.58	0.58	0.21	0.39			0.17	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				984	1003	883	350	1410			1085	
v/s Ratio Prot					c0.52		c0.18	0.13			c0.12	
v/s Ratio Perm				0.31		0.46						
v/c Ratio				0.53	0.91	0.81	0.89	0.33			0.69	
Uniform Delay, d1				15.6	22.7	20.1	46.4	25.6			46.9	
Progression Factor				1.00	1.00	1.00	0.90	0.62			1.11	
Incremental Delay, d2				2.1	13.5	7.8	22.2	0.1			1.8	
Delay (s)				17.7	36.2	27.9	63.8	16.0			53.7	
Level of Service				B	D	C	E	B			D	
Approach Delay (s)		0.0			28.9			35.2			53.7	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	671	1430	0	0	452	291	293	3	114	0	0	0
Future Volume (vph)	671	1430	0	0	452	291	293	3	114	0	0	0
Ideal Flow (vphpl)	1800	1900	1900	1900	1900	1900	1800	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1710	3610			5187	1615	1624	1635	1534			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1710	3610			5187	1615	1624	1635	1534			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	706	1505	0	0	476	306	308	3	120	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	254	0	2	60	0	0	0
Lane Group Flow (vph)	706	1505	0	0	476	52	163	158	48	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	58.9	81.1			17.7	17.7	29.9	29.9	29.9			
Effective Green, g (s)	61.4	83.6			20.2	20.2	32.4	32.4	32.4			
Actuated g/C Ratio	0.51	0.70			0.17	0.17	0.27	0.27	0.27			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	874	2514			873	271	438	441	414			
v/s Ratio Prot	c0.41	c0.42			0.09							
v/s Ratio Perm						0.03	c0.10	0.10	0.03			
v/c Ratio	0.81	0.60			0.55	0.19	0.37	0.36	0.12			
Uniform Delay, d1	24.4	9.5			45.7	42.9	35.5	35.4	33.0			
Progression Factor	1.00	1.00			0.89	4.36	1.00	1.00	1.00			
Incremental Delay, d2	5.5	0.4			0.6	0.3	2.4	2.3	0.6			
Delay (s)	29.9	9.9			41.4	187.0	38.0	37.7	33.6			
Level of Service	C	A			D	F	D	D	C			
Approach Delay (s)		16.3			98.4			36.7			0.0	
Approach LOS		B			F			D			A	

Intersection Summary			
HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	148	876	88	91	351	665	20	17	75	229	101	56
Future Volume (vph)	148	876	88	91	351	665	20	17	75	229	101	56
Ideal Flow (vphpl)	1800	1900	1900	1900	1700	1900	1900	1900	1700	1900	1900	1800
Total Lost time (s)	2.0	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	*1.00	*1.00		*1.00	*1.00			*1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00
Flt Protected	1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00
Satd. Flow (prot)	1800	3800	1900		3400	3800			3400	1900	1900	1800
Flt Permitted	1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00
Satd. Flow (perm)	1800	3800	1900		3400	3800			3400	1900	1900	1800
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	156	922	93	96	369	700	21	18	79	241	106	59
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	62	0
Lane Group Flow (vph)	156	931	84	0	465	721	0	0	97	241	44	59
Turn Type	Prot	NA	Prot	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot
Protected Phases	7	4	4	3	3	8		5	5	2	3	1
Permitted Phases											2	
Actuated Green, G (s)	16.0	35.5	35.5		18.5	38.0			5.0	18.5	37.0	5.5
Effective Green, g (s)	18.5	38.0	38.0		21.0	40.5			7.5	21.0	42.0	8.0
Actuated g/C Ratio	0.15	0.32	0.32		0.18	0.34			0.06	0.18	0.35	0.07
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5			4.5	4.5	4.5	4.5
Lane Grp Cap (vph)	277	1203	601		595	1282			212	332	696	120
v/s Ratio Prot	0.09	c0.24	0.04		c0.14	0.19			0.03	c0.13	0.01	c0.03
v/s Ratio Perm											0.01	
v/c Ratio	0.56	0.77	0.14		0.78	0.56			0.46	0.73	0.06	0.49
Uniform Delay, d1	47.0	37.1	29.3		47.3	32.5			54.3	46.8	25.9	54.0
Progression Factor	0.84	0.88	0.84		0.53	0.97			1.00	1.00	1.00	1.00
Incremental Delay, d2	7.0	4.3	0.4		9.0	1.6			7.0	13.0	0.2	13.7
Delay (s)	46.7	36.8	24.9		34.3	33.0			61.2	59.8	26.1	67.7
Level of Service	D	D	C		C	C			E	E	C	E
Approach Delay (s)		37.3				33.5				52.1		
Approach LOS		D				C				D		

Intersection Summary			
HCM 2000 Control Delay	42.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations							
Traffic Volume (vph)	246	88	50	6	158	473	68
Future Volume (vph)	246	88	50	6	158	473	68
Ideal Flow (vphpl)	1900	1900	1900	1700	1700	1900	1900
Total Lost time (s)	2.0			2.0	2.0	2.0	
Lane Util. Factor	*1.00			1.00	1.00	*1.00	
Frt	1.00			1.00	1.00	1.00	
Flt Protected	1.00			1.00	1.00	1.00	
Satd. Flow (prot)	3800			1700	1700	3800	
Flt Permitted	1.00			1.00	1.00	1.00	
Satd. Flow (perm)	3800			1700	1700	3800	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	259	93	53	6	166	498	72
RTOR Reduction (vph)	11	0	0	0	0	111	0
Lane Group Flow (vph)	394	0	0	6	166	459	0
Turn Type	NA			Prot	Prot	Perm	
Protected Phases	6			9	9		
Permitted Phases						9	
Actuated Green, G (s)	19.0			19.5	19.5	19.5	
Effective Green, g (s)	21.5			22.0	22.0	22.0	
Actuated g/C Ratio	0.18			0.18	0.18	0.18	
Clearance Time (s)	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	680			311	311	696	
v/s Ratio Prot	0.10			0.00	0.10		
v/s Ratio Perm						c0.12	
v/c Ratio	0.58			0.02	0.53	0.66	
Uniform Delay, d1	45.1			40.2	44.4	45.5	
Progression Factor	1.00			1.03	1.05	1.07	
Incremental Delay, d2	3.6			0.1	4.7	3.5	
Delay (s)	48.7			41.6	51.1	52.1	
Level of Service	D			D	D	D	
Approach Delay (s)	51.1				51.8		
Approach LOS	D				D		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	1518	314	114	930	41	102	231	76	59	234	55
Future Volume (vph)	92	1518	314	114	930	41	102	231	76	59	234	55
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1710	3517		1710	3587		1710	3476		1710	3507	
Flt Permitted	0.20	1.00		0.06	1.00		0.50	1.00		0.49	1.00	
Satd. Flow (perm)	365	3517		103	3587		904	3476		877	3507	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	97	1598	331	120	979	43	107	243	80	62	246	58
RTOR Reduction (vph)	0	15	0	0	3	0	0	17	0	0	17	0
Lane Group Flow (vph)	97	1914	0	120	1020	0	107	306	0	62	287	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	67.5	67.5		67.5	67.5		43.5	43.5		43.5	43.5	
Effective Green, g (s)	70.0	70.0		70.0	70.0		46.0	46.0		46.0	46.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.38	0.38		0.38	0.38	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	212	2051		60	2092		346	1332		336	1344	
v/s Ratio Prot		0.54			0.28			0.09			0.08	
v/s Ratio Perm	0.27			c1.17			c0.12			0.07		
v/c Ratio	0.46	0.93		2.00	0.49		0.31	0.23		0.18	0.21	
Uniform Delay, d1	14.2	22.9		25.0	14.6		25.9	25.0		24.6	24.8	
Progression Factor	0.78	1.00		1.90	2.05		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	7.4		494.2	0.1		2.3	0.4		1.2	0.4	
Delay (s)	12.4	30.3		541.8	30.0		28.2	25.4		25.8	25.2	
Level of Service	B	C		F	C		C	C		C	C	
Approach Delay (s)		29.4			83.8			26.1			25.3	
Approach LOS		C			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	44.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	1011	221	171	677	107	193	772	143	213	763	243
Future Volume (vph)	159	1011	221	171	677	107	193	772	143	213	763	243
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1710	3610	1615	1710	3610	1615	1710	5065		1710	4999	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1710	3610	1615	1710	3610	1615	1710	5065		1710	4999	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	167	1064	233	180	713	113	203	813	151	224	803	256
RTOR Reduction (vph)	0	0	144	0	0	58	0	22	0	0	46	0
Lane Group Flow (vph)	167	1064	89	180	713	55	203	942	0	224	1013	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	12.9	43.1	43.1	13.8	44.0	44.0	15.8	27.9		17.2	29.3	
Effective Green, g (s)	15.4	45.6	45.6	16.3	46.5	46.5	18.3	30.4		19.7	31.8	
Actuated g/C Ratio	0.13	0.38	0.38	0.14	0.39	0.39	0.15	0.25		0.16	0.27	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	219	1371	613	232	1398	625	260	1283		280	1324	
v/s Ratio Prot	0.10	c0.29		c0.11	0.20		0.12	0.19		c0.13	c0.20	
v/s Ratio Perm			0.05			0.03						
v/c Ratio	0.76	0.78	0.14	0.78	0.51	0.09	0.78	0.73		0.80	0.76	
Uniform Delay, d1	50.5	32.7	24.4	50.1	28.1	23.3	48.9	41.1		48.3	40.7	
Progression Factor	0.90	0.87	2.23	0.69	1.67	3.96	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.1	1.3	0.0	14.4	0.3	0.1	14.1	3.8		15.0	4.3	
Delay (s)	52.6	29.6	54.5	49.1	47.1	92.4	63.0	44.9		63.2	44.9	
Level of Service	D	C	D	D	D	F	E	D		E	D	
Approach Delay (s)		36.2			52.5			48.0			48.1	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	258	1019	705	131	73	215
Future Volume (vph)	258	1019	705	131	73	215
Ideal Flow (vphpl)	1800	1900	1900	1900	1700	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.91	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.98	1.00
Satd. Flow (prot)	1710	3610	3610	1615	2944	1470
Flt Permitted	0.15	1.00	1.00	1.00	0.98	1.00
Satd. Flow (perm)	264	3610	3610	1615	2944	1470
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	272	1073	742	138	77	226
RTOR Reduction (vph)	0	0	0	96	58	58
Lane Group Flow (vph)	272	1073	742	42	132	55
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	55.0	55.0	33.9	33.9	56.0	56.0
Effective Green, g (s)	57.5	57.5	36.4	36.4	58.5	58.5
Actuated g/C Ratio	0.48	0.48	0.30	0.30	0.49	0.49
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	356	1729	1095	489	1435	716
v/s Ratio Prot	c0.12	0.30	c0.21		c0.04	
v/s Ratio Perm	0.24			0.03		0.04
v/c Ratio	0.76	0.62	0.68	0.09	0.09	0.08
Uniform Delay, d1	23.8	23.2	36.7	29.9	16.5	16.4
Progression Factor	1.31	1.61	0.71	0.49	1.00	1.00
Incremental Delay, d2	6.3	0.5	1.4	0.1	0.1	0.2
Delay (s)	37.6	37.8	27.4	14.8	16.6	16.6
Level of Service	D	D	C	B	B	B
Approach Delay (s)		37.8	25.4		16.6	
Approach LOS		D	C		B	

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	86	442	30	26	2	436	1010	161	22	1494	426
Future Volume (vph)	240	86	442	30	26	2	436	1010	161	22	1494	426
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1624	1763	1615	1710	3610	1615	1710	5080		1710	3610	1615
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1624	1763	1615	1710	3610	1615	1710	5080		1710	3610	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	253	91	465	32	27	2	459	1063	169	23	1573	448
RTOR Reduction (vph)	0	0	132	0	0	2	0	14	0	0	0	167
Lane Group Flow (vph)	170	174	333	32	27	0	459	1218	0	23	1573	281
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	16.4	16.4	53.8	6.6	6.6	6.6	37.4	74.1		4.9	41.6	58.0
Effective Green, g (s)	18.9	18.9	58.8	9.1	9.1	9.1	39.9	76.6		7.4	44.1	63.0
Actuated g/C Ratio	0.16	0.16	0.49	0.08	0.08	0.08	0.33	0.64		0.06	0.37	0.52
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	255	277	791	129	273	122	568	3242		105	1326	874
v/s Ratio Prot	c0.10	0.10	0.14	c0.02	0.01		c0.27	0.24		0.01	c0.44	0.05
v/s Ratio Perm			0.07			0.00						0.12
v/c Ratio	0.67	0.63	0.42	0.25	0.10	0.00	0.81	0.38		0.22	1.19	0.32
Uniform Delay, d1	47.6	47.3	19.7	52.2	51.6	51.2	36.6	10.3		53.6	37.9	16.3
Progression Factor	1.00	1.00	3.70	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.0	4.1	0.3	1.0	0.2	0.0	8.3	0.3		1.1	91.7	0.2
Delay (s)	53.8	51.6	73.1	53.2	51.8	51.3	44.8	10.7		54.6	129.7	16.5
Level of Service	D	D	E	D	D	D	D	B		D	F	B
Approach Delay (s)		64.4			52.5			19.9			104.0	
Approach LOS		E			D			B			F	

Intersection Summary			
HCM 2000 Control Delay	65.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	268	526	369	0	0	17	1	567	397	655	692	0
Future Volume (veh/h)	268	526	369	0	0	17	1	567	397	655	692	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900				1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	282	554	388				1	597	418	689	728	0
Adj No. of Lanes	1	2	0				0	3	0	2	2	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	683	787	551				30	1184	501	812	2127	0
Arrive On Green	0.38	0.38	0.38				0.34	0.34	0.34	0.23	0.59	0.00
Sat Flow, veh/h	1810	2084	1459				1	3471	1470	3510	3705	0
Grp Volume(v), veh/h	282	505	437				327	271	418	689	728	0
Grp Sat Flow(s),veh/h/ln	1810	1900	1643				1898	1573	1470	1755	1805	0
Q Serve(g_s), s	13.8	27.1	27.1				0.0	16.5	31.4	22.5	12.5	0.0
Cycle Q Clear(g_c), s	13.8	27.1	27.1				16.4	16.5	31.4	22.5	12.5	0.0
Prop In Lane	1.00		0.89				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	683	717	620				678	537	501	812	2127	0
V/C Ratio(X)	0.41	0.70	0.70				0.48	0.50	0.83	0.85	0.34	0.00
Avail Cap(c_a), veh/h	683	717	620				702	557	521	863	2226	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	1.00	0.72	0.72	0.00
Uniform Delay (d), s/veh	27.5	31.7	31.7				31.5	31.5	36.4	44.1	12.7	0.0
Incr Delay (d2), s/veh	1.8	5.7	6.6				0.5	0.7	10.9	5.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	15.3	13.4				8.7	7.3	14.3	11.5	6.2	0.0
LnGrp Delay(d),s/veh	29.4	37.4	38.3				32.0	32.2	47.3	49.7	12.8	0.0
LnGrp LOS	C	D	D				C	C	D	D	B	
Approach Vol, veh/h		1224						1016			1417	
Approach Delay, s/veh		35.9						38.3			30.7	
Approach LOS		D						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			29.8	42.9		47.3		72.7
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.0	40.0		39.5		71.5
Max Q Clear Time (g_c+I1), s			24.5	33.4		29.1		14.5
Green Ext Time (p_c), s			0.7	5.0		5.1		18.5

Intersection Summary	
HCM 2010 Ctrl Delay	34.6
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	56.9	29.3	90.8	83.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	4	2	5	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	0
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.45	2.55	2.74	2.85
Pedestrian Crosswalk LOS	B	B	B	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1224	18	1016	1417
Effct. Green for Bike (s)	48.5	0.0	36.3	67.5
Cross Street Width (ft)	90.8	83.1	29.3	56.9
Through Lanes Number	2	0	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	808	0	605	1125
Bicycle Delay (s/bike)	21.3	0.0	29.2	11.5
Bicycle Compliance	Fair		Fair	Fair
Bicycle LOS Score	3.96	0.00	2.57	3.60
Bicycle LOS	D		B	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	428	616	663	294	541	0	0	908	352
Future Volume (veh/h)	0	0	0	428	616	663	294	541	0	0	908	352
Number				5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				451	686	673	309	569	0	0	956	371
Adj No. of Lanes				1	1	1	1	2	0	0	4	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				766	804	683	371	1962	0	0	1578	520
Arrive On Green				0.42	0.42	0.42	0.20	0.54	0.00	0.00	0.32	0.32
Sat Flow, veh/h				1810	1900	1615	1810	3705	0	0	5168	1615
Grp Volume(v), veh/h				451	686	673	309	569	0	0	956	371
Grp Sat Flow(s),veh/h/ln				1810	1900	1615	1810	1805	0	0	1634	1615
Q Serve(g_s), s				23.0	39.1	49.5	19.6	10.3	0.0	0.0	19.7	24.3
Cycle Q Clear(g_c), s				23.0	39.1	49.5	19.6	10.3	0.0	0.0	19.7	24.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				766	804	683	371	1962	0	0	1578	520
V/C Ratio(X)				0.59	0.85	0.98	0.83	0.29	0.00	0.00	0.61	0.71
Avail Cap(c_a), veh/h				766	804	683	445	2226	0	0	1736	572
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.72	0.72	0.00	0.00	0.31	0.31
Uniform Delay (d), s/veh				26.6	31.2	34.2	45.7	14.8	0.0	0.0	34.3	35.8
Incr Delay (d2), s/veh				3.3	11.1	30.9	8.2	0.1	0.0	0.0	0.2	1.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				12.1	22.9	27.9	10.6	5.1	0.0	0.0	8.9	11.0
LnGrp Delay(d),s/veh				29.9	42.4	65.1	54.0	14.9	0.0	0.0	34.4	37.0
LnGrp LOS				C	D	E	D	B			C	D
Approach Vol, veh/h					1810			878			1327	
Approach Delay, s/veh					47.7			28.6			35.2	
Approach LOS					D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		52.8		67.2			26.6	40.6
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		39.5		71.5			27.0	40.0
Max Q Clear Time (g_c+I1), s		51.5		12.3			21.6	26.3
Green Ext Time (p_c), s		0.0		22.6			0.4	9.9

Intersection Summary	
HCM 2010 Ctrl Delay	39.4
HCM 2010 LOS	D

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	42.0	39.1	75.9	119.7
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	4	6
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	0	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.39	2.55	2.71	2.90
Pedestrian Crosswalk LOS	B	B	B	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	0	1797	878	1327
Effct. Green for Bike (s)	0.0	48.9	67.1	38.0
Cross Street Width (ft)	75.9	119.7	39.1	42.0
Through Lanes Number	0	1	2	4
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	0	815	1118	633
Bicycle Delay (s/bike)	0.0	21.1	11.7	28.0
Bicycle Compliance		Fair	Fair	Fair
Bicycle LOS Score	0.00	6.36	2.88	2.75
Bicycle LOS		F	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	805	977	0	0	834	883	264	7	186	0	0	0
Future Volume (veh/h)	805	977	0	0	834	883	264	7	186	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	847	1028	0	0	878	929	342	0	133			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	769	2828	0	0	1772	552	663	0	296			
Arrive On Green	0.43	0.78	0.00	0.00	0.34	0.34	0.18	0.00	0.18			
Sat Flow, veh/h	1810	3705	0	0	5358	1615	3619	0	1615			
Grp Volume(v), veh/h	847	1028	0	0	878	929	342	0	133			
Grp Sat Flow(s),veh/h/ln	1810	1805	0	0	1729	1615	1810	0	1615			
Q Serve(g_s), s	51.0	10.4	0.0	0.0	16.1	41.0	10.2	0.0	8.8			
Cycle Q Clear(g_c), s	51.0	10.4	0.0	0.0	16.1	41.0	10.2	0.0	8.8			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	769	2828	0	0	1772	552	663	0	296			
V/C Ratio(X)	1.10	0.36	0.00	0.00	0.50	1.68	0.52	0.00	0.45			
Avail Cap(c_a), veh/h	769	2828	0	0	1772	552	663	0	296			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.54	0.54	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.5	3.9	0.0	0.0	31.3	39.5	44.2	0.0	43.6			
Incr Delay (d2), s/veh	63.8	0.1	0.0	0.0	0.1	311.9	2.8	0.0	4.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	39.0	5.0	0.0	0.0	7.7	66.0	5.4	0.0	4.3			
LnGrp Delay(d),s/veh	98.3	4.0	0.0	0.0	31.4	351.4	47.0	0.0	48.5			
LnGrp LOS	F	A			C	F	D		D			
Approach Vol, veh/h		1875			1807			475				
Approach Delay, s/veh		46.6			195.9			47.4				
Approach LOS		D			F			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		24.0		96.0			53.0	43.0
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		19.5		91.5			48.5	38.5
Max Q Clear Time (g_c+I1), s		12.2		12.4			53.0	43.0
Green Ext Time (p_c), s		1.0		42.4			0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	111.6
HCM 2010 LOS	F

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	84.3	36.0	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.97	2.97	2.12	2.61
Pedestrian Crosswalk LOS	C	C	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1875	1807	481	0
Effct. Green for Bike (s)	94.0	41.0	22.0	0.0
Cross Street Width (ft)	36.0	25.8	84.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1567	683	367	0
Bicycle Delay (s/bike)	2.8	26.0	40.0	0.0
Bicycle Compliance	Good	Fair	Poor	
Bicycle LOS Score	3.66	2.95	3.64	0.00
Bicycle LOS	D	C	D	

Approach	EB	WB	NB	SB	NE
Crosswalk Length (ft)	141.0	73.1	103.0	63.0	97.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	6	6	4	8
Number of Right-Turn Islands	0	0	0	0	0
Type of Control	None	None	None	None	None
Corresponding Signal Phase	6	2	9	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0	0
85th percentile speed (mph)	30	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.03	2.97	2.75	2.46	2.93
Pedestrian Crosswalk LOS	C	C	B	B	C

Approach	EB	WB	NB	SB	NE
Bicycle Flow Rate (bike/h)	0	0	0	0	0
Total Flow Rate (veh/h)	949	1640	962	557	794
Effct. Green for Bike (s)	27.0	42.0	29.0	21.5	20.5
Cross Street Width (ft)	97.1	63.0	73.1	141.0	103.0
Through Lanes Number	2	2	1	2	1
Through Lane Width (ft)	12.0	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No	No
On Street Parking?	No	No	No	No	No
Bicycle Lane Capacity (bike/h)	450	700	483	358	342
Bicycle Delay (s/bike)	36.0	25.4	34.5	40.4	41.3
Bicycle Compliance	Poor	Fair	Poor	Poor	Poor
Bicycle LOS Score	3.83	3.88	4.27	4.18	4.45
Bicycle LOS	D	D	E	D	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	1250	131	112	1310	49	265	382	122	52	405	102
Future Volume (veh/h)	95	1250	131	112	1310	49	265	382	122	52	405	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	100	1316	138	118	1379	52	279	402	128	55	426	107
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	181	1925	201	173	2070	78	303	1036	326	303	1098	274
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	380	3300	345	372	3548	134	885	2703	851	887	2865	714
Grp Volume(v), veh/h	100	717	737	118	701	730	279	267	263	55	267	266
Grp Sat Flow(s),veh/h/ln	380	1805	1839	372	1805	1876	885	1805	1750	887	1805	1774
Q Serve(g_s), s	29.3	33.0	33.4	36.6	31.7	31.9	32.9	12.8	13.1	5.8	12.8	13.1
Cycle Q Clear(g_c), s	61.1	33.0	33.4	70.0	31.7	31.9	46.0	12.8	13.1	18.8	12.8	13.1
Prop In Lane	1.00		0.19	1.00		0.07	1.00		0.49	1.00		0.40
Lane Grp Cap(c), veh/h	181	1053	1073	173	1053	1095	303	692	671	303	692	680
V/C Ratio(X)	0.55	0.68	0.69	0.68	0.67	0.67	0.92	0.39	0.39	0.18	0.39	0.39
Avail Cap(c_a), veh/h	181	1053	1073	173	1053	1095	303	692	671	303	692	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.56	0.56	0.56	0.18	0.18	0.18	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	17.3	17.4	42.4	17.0	17.1	45.7	26.8	26.9	33.7	26.8	26.8
Incr Delay (d2), s/veh	2.0	1.0	1.0	2.0	0.3	0.3	34.9	1.6	1.7	1.3	1.6	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	16.6	17.1	4.0	15.9	16.5	12.2	6.7	6.6	1.5	6.7	6.7
LnGrp Delay(d),s/veh	39.9	18.3	18.4	44.4	17.3	17.3	80.6	28.4	28.6	35.0	28.4	28.5
LnGrp LOS	D	B	B	D	B	B	F	C	C	D	C	C
Approach Vol, veh/h		1554			1549			809			588	
Approach Delay, s/veh		19.7			19.4			46.4			29.1	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		48.0		72.0		48.0		72.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		43.5		67.5		43.5		67.5
Max Q Clear Time (g_c+I1), s		48.0		63.1		20.8		72.0
Green Ext Time (p_c), s		0.0		4.3		9.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.0	71.8	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.97	2.92	2.61	2.54
Pedestrian Crosswalk LOS	C	C	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1554	1549	809	588
Effct. Green for Bike (s)	70.0	70.0	46.0	46.0
Cross Street Width (ft)	60.0	60.0	71.8	72.0
Through Lanes Number	2	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1167	1167	767	767
Bicycle Delay (s/bike)	10.4	10.4	22.8	22.8
Bicycle Compliance	Fair	Fair	Fair	Fair
Bicycle LOS Score	3.76	3.76	3.33	3.15
Bicycle LOS	D	D	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	302	883	292	226	981	251	263	873	138	213	1089	137
Future Volume (veh/h)	302	883	292	226	981	251	263	873	138	213	1089	137
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	318	929	307	238	1033	264	277	919	145	224	1146	144
Adj No. of Lanes	1	2	1	1	2	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	356	1192	533	295	1071	479	312	1286	202	282	1249	157
Arrive On Green	0.26	0.44	0.44	0.22	0.39	0.39	0.23	0.38	0.38	0.21	0.36	0.36
Sat Flow, veh/h	1810	3610	1615	1810	3610	1615	1810	4522	711	1810	4668	586
Grp Volume(v), veh/h	318	929	307	238	1033	264	277	702	362	224	849	441
Grp Sat Flow(s),veh/h/ln	1810	1805	1615	1810	1805	1615	1810	1729	1775	1810	1729	1797
Q Serve(g_s), s	20.3	26.3	17.1	15.0	33.6	15.2	17.8	20.8	20.9	14.1	28.2	28.2
Cycle Q Clear(g_c), s	20.3	26.3	17.1	15.0	33.6	15.2	17.8	20.8	20.9	14.1	28.2	28.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.40	1.00		0.33
Lane Grp Cap(c), veh/h	356	1192	533	295	1071	479	312	983	505	282	925	481
V/C Ratio(X)	0.89	0.78	0.58	0.81	0.96	0.55	0.89	0.71	0.72	0.80	0.92	0.92
Avail Cap(c_a), veh/h	356	1192	533	320	1071	479	312	983	505	302	925	481
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	0.67	0.67	0.67	0.70	0.70	0.70	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	29.9	27.4	45.2	35.7	30.1	45.1	33.2	33.2	45.8	37.4	37.4
Incr Delay (d2), s/veh	17.5	2.3	1.0	9.5	15.3	0.9	25.0	4.4	8.5	13.0	15.3	25.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	13.5	7.7	8.3	18.9	6.8	11.0	10.5	11.4	8.1	15.3	17.2
LnGrp Delay(d),s/veh	60.6	32.2	28.4	54.7	51.0	31.1	70.2	37.6	41.7	58.7	52.7	62.4
LnGrp LOS	E	C	C	D	D	C	E	D	D	E	D	E
Approach Vol, veh/h		1554			1535			1341			1514	
Approach Delay, s/veh		37.3			48.2			45.4			56.4	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.7	36.1	21.6	41.6	22.7	34.1	25.6	37.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	17.5	30.3	18.7	35.5	18.2	29.6	21.1	33.1
Max Q Clear Time (g_c+I1), s	16.1	22.9	17.0	28.3	19.8	30.2	22.3	35.6
Green Ext Time (p_c), s	0.1	6.5	0.1	6.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.8
HCM 2010 LOS	D

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.0	84.9	84.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.96	2.93	3.04	3.04
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1554	1535	1341	1514
Effct. Green for Bike (s)	38.7	35.6	33.4	32.1
Cross Street Width (ft)	84.9	84.8	72.0	72.2
Through Lanes Number	2	2	3	3
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	645	593	557	535
Bicycle Delay (s/bike)	27.5	29.7	31.2	32.2
Bicycle Compliance	Fair	Fair	Poor	Poor
Bicycle LOS Score	4.14	4.12	3.40	3.50
Bicycle LOS	D	D	C	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	195	1086	1038	68	180	225
Future Volume (veh/h)	195	1086	1038	68	180	225
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	205	1143	1093	72	142	287
Adj No. of Lanes	1	2	2	1	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	338	2033	1626	727	730	1303
Arrive On Green	0.10	0.56	0.45	0.45	0.40	0.40
Sat Flow, veh/h	1810	3705	3705	1615	1810	3230
Grp Volume(v), veh/h	205	1143	1093	72	142	287
Grp Sat Flow(s),veh/h/ln	1810	1805	1805	1615	1810	1615
Q Serve(g_s), s	6.7	24.3	28.6	3.1	6.1	7.0
Cycle Q Clear(g_c), s	6.7	24.3	28.6	3.1	6.1	7.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	338	2033	1626	727	730	1303
V/C Ratio(X)	0.61	0.56	0.67	0.10	0.19	0.22
Avail Cap(c_a), veh/h	465	2557	1895	848	730	1303
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.50	0.50	0.80	0.80	1.00	1.00
Uniform Delay (d), s/veh	19.6	16.8	26.0	19.0	23.2	23.4
Incr Delay (d2), s/veh	0.9	0.1	0.6	0.0	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	12.1	14.4	1.4	3.2	7.7
LnGrp Delay(d),s/veh	20.5	16.9	26.6	19.0	23.8	23.8
LnGrp LOS	C	B	C	B	C	C
Approach Vol, veh/h		1348	1165		429	
Approach Delay, s/veh		17.4	26.1		23.8	
Approach LOS		B	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				69.6		50.4	13.5	56.0
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				82.5		28.5	17.5	60.5
Max Q Clear Time (g_c+I1), s				26.3		9.0	8.7	30.6
Green Ext Time (p_c), s				30.9		1.4	0.4	20.9

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Notes

Approach	EB	WB	SB
Crosswalk Length (ft)	60.0	60.0	61.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	5	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.84	2.76	2.46
Pedestrian Crosswalk LOS	C	C	B

Approach	EB	WB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	1348	1165	426
Effct. Green for Bike (s)	69.8	50.4	46.2
Cross Street Width (ft)	60.0	61.2	60.0
Through Lanes Number	2	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	1163	840	770
Bicycle Delay (s/bike)	10.5	20.2	22.7
Bicycle Compliance	Fair	Fair	Fair
Bicycle LOS Score	3.59	3.46	2.83
Bicycle LOS	D	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	493	10	663	39	30	3	392	1606	18	10	1392	410
Future Volume (veh/h)	493	10	663	39	30	3	392	1606	18	10	1392	410
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	527	0	698	41	32	3	413	1691	19	11	1465	432
Adj No. of Lanes	2	0	1	1	2	1	1	3	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	618	0	626	107	214	96	392	3541	40	61	1757	1062
Arrive On Green	0.17	0.00	0.17	0.06	0.06	0.06	0.22	0.67	0.67	0.03	0.49	0.49
Sat Flow, veh/h	3619	0	1615	1810	3610	1615	1810	5288	59	1810	3610	1615
Grp Volume(v), veh/h	527	0	698	41	32	3	413	1106	604	11	1465	432
Grp Sat Flow(s),veh/h/ln	1810	0	1615	1810	1805	1615	1810	1729	1890	1810	1805	1615
Q Serve(g_s), s	17.0	0.0	20.5	2.6	1.0	0.2	26.0	18.6	18.6	0.7	42.1	15.0
Cycle Q Clear(g_c), s	17.0	0.0	20.5	2.6	1.0	0.2	26.0	18.6	18.6	0.7	42.1	15.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	618	0	626	107	214	96	392	2316	1265	61	1757	1062
V/C Ratio(X)	0.85	0.00	1.12	0.38	0.15	0.03	1.05	0.48	0.48	0.18	0.83	0.41
Avail Cap(c_a), veh/h	618	0	626	309	617	276	392	2316	1265	113	1757	1062
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	0.0	36.8	54.3	53.6	53.2	47.0	9.6	9.6	56.4	26.6	9.6
Incr Delay (d2), s/veh	9.8	0.0	69.9	2.2	0.3	0.1	60.2	0.7	1.3	1.4	4.8	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	0.0	32.8	1.4	0.5	0.1	19.5	9.0	10.0	0.4	22.1	10.3
LnGrp Delay(d),s/veh	58.1	0.0	106.6	56.6	53.9	53.3	107.2	10.3	10.9	57.8	31.4	10.8
LnGrp LOS	E		F	E	D	D	F	B	B	E	C	B
Approach Vol, veh/h		1225			76			2123			1908	
Approach Delay, s/veh		85.8			55.3			29.3			26.9	
Approach LOS		F			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	82.4		22.5	28.0	60.4		9.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.0	61.0		18.0	23.5	42.5		18.0
Max Q Clear Time (g_c+I1), s	2.7	20.6		22.5	28.0	44.1		4.6
Green Ext Time (p_c), s	0.0	35.9		0.0	0.0	0.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	41.8
HCM 2010 LOS	D

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	61.1	60.0	73.0	85.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	5	5	6	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.73	2.34	3.18	3.19
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1228	76	2123	1908
Effct. Green for Bike (s)	20.5	10.8	82.2	45.0
Cross Street Width (ft)	73.0	85.0	60.0	61.1
Through Lanes Number	1	2	3	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	342	180	1370	750
Bicycle Delay (s/bike)	41.3	49.7	6.0	23.4
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	4.70	2.92	3.65	4.07
Bicycle LOS	E	C	D	D

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	1	236	10	0	341
Future Vol, veh/h	22	1	236	10	0	341
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	23	1	248	11	0	359

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	433	129	0	0	259	0
Stage 1	254	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	556	903	-	-	1317	-
Stage 1	771	-	-	-	-	-
Stage 2	840	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	556	903	-	-	1317	-
Mov Cap-2 Maneuver	619	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	840	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	628	1317	-
HCM Lane V/C Ratio	-	-	0.039	-	-
HCM Control Delay (s)	-	-	11	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	105.9
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	577
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.95
Prob of Blocked Lane	0.53
Delay for adq Gap	111.17
Avg Ped Delay (s)	105.88

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	105.9
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	577
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.95
Prob of Blocked Lane	0.53
Delay for adq Gap	111.17
Avg Ped Delay (s)	105.88

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	0	246	5	0	363
Future Vol, veh/h	11	0	246	5	0	363
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	12	0	259	5	0	382

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	453	132	0	0	264	0
Stage 1	262	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	540	899	-	-	1312	-
Stage 1	764	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	540	899	-	-	1312	-
Mov Cap-2 Maneuver	608	-	-	-	-	-
Stage 1	764	-	-	-	-	-
Stage 2	828	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	608	1312	-
HCM Lane V/C Ratio	-	-	0.019	-	-
HCM Control Delay (s)	-	-	11	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	129.2
Level of Service	F

Crosswalk	
Length (ft)	57
Lanes Crossed	4
Veh Vol Crossed	609
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.29
Prob of Delayed X-ing	0.96
Prob of Blocked Lane	0.56
Delay for adq Gap	134.32
Avg Ped Delay (s)	129.18

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	122.2
Level of Service	F

Crosswalk	
Length (ft)	56
Lanes Crossed	4
Veh Vol Crossed	609
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	19.00
Prob of Delayed X-ing	0.96
Prob of Blocked Lane	0.55
Delay for adq Gap	127.29
Avg Ped Delay (s)	122.18

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	0	251	14	0	374
Future Vol, veh/h	32	0	251	14	0	374
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	34	0	264	15	0	394

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	469	139	0	0	279	0
Stage 1	272	-	-	-	-	-
Stage 2	197	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	528	890	-	-	1295	-
Stage 1	755	-	-	-	-	-
Stage 2	823	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	528	890	-	-	1295	-
Mov Cap-2 Maneuver	599	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	823	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	599	1295	-
HCM Lane V/C Ratio	-	-	0.056	-	-
HCM Control Delay (s)	-	-	11.4	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	254.6
Level of Service	F

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	625
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	0.98
Prob of Blocked Lane	0.62
Delay for adq Gap	259.92
Avg Ped Delay (s)	254.63

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	456.7
Level of Service	F

Crosswalk	
Length (ft)	79
Lanes Crossed	4
Veh Vol Crossed	625
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	25.57
Prob of Delayed X-ing	0.99
Prob of Blocked Lane	0.67
Delay for adq Gap	462.17
Avg Ped Delay (s)	456.72

HCM Signalized Intersection Capacity Analysis
1: Inland Center Drive & I-215 SB Off Ramp/I-215 SB On Ramp

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	526	369	0	0	17	1	567	397	655	692	0
Future Volume (vph)	268	526	369	0	0	17	1	567	397	655	692	0
Ideal Flow (vphpl)	1800	1900	1900	1900	1900	1900	1900	1900	1900	1700	1900	1900
Total Lost time (s)	2.0	2.0			1.5			2.0		2.0	2.0	
Lane Util. Factor	0.91	0.91			1.00			0.91		0.97	0.95	
Frt	1.00	0.94			0.85			0.94		1.00	1.00	
Flt Protected	0.95	1.00			1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1556	3246			0			4867		3133	3610	
Flt Permitted	0.95	1.00			1.00			0.94		0.95	1.00	
Satd. Flow (perm)	1556	3246			0			4573		3133	3610	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	282	554	388	0	0	18	1	597	418	689	728	0
RTOR Reduction (vph)	0	74	0	0	18	0	0	63	0	0	0	0
Lane Group Flow (vph)	254	896	0	0	0	0	0	953	0	689	728	0
Turn Type	Perm	NA					Perm	NA		Prot	NA	
Protected Phases		6						4		3	8	
Permitted Phases	6						4					
Actuated Green, G (s)	46.0	46.0			0.0			33.8		26.7	65.0	
Effective Green, g (s)	48.5	48.5			0.0			36.3		29.2	67.5	
Actuated g/C Ratio	0.40	0.40			0.00			0.30		0.24	0.56	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	628	1311			0			1383		762	2030	
v/s Ratio Prot										c0.22	0.20	
v/s Ratio Perm	0.16	0.28						c0.21				
v/c Ratio	0.40	0.68			0.00			0.69		0.90	0.36	
Uniform Delay, d1	25.5	29.4			60.0			36.9		44.0	14.4	
Progression Factor	1.00	1.00			1.00			1.00		1.52	0.75	
Incremental Delay, d2	1.9	2.9			0.0			1.5		11.8	0.1	
Delay (s)	27.4	32.3			60.0			38.3		78.6	10.9	
Level of Service	C	C			E			D		E	B	
Approach Delay (s)		31.3			60.0			38.3			43.8	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	38.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	428	616	663	294	541	0	0	908	352
Future Volume (vph)	0	0	0	428	616	663	294	541	0	0	908	352
Ideal Flow (vphpl)	1900	1900	1900	1800	1900	1900	1800	1900	1900	1900	1900	1900
Total Lost time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lane Util. Factor				1.00	0.95	0.95	1.00	0.95			0.86	
Frt				1.00	0.98	0.85	1.00	1.00			0.96	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1710	1776	1534	1710	3610			6262	
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (perm)				1710	1776	1534	1710	3610			6262	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	451	648	698	309	569	0	0	956	371
RTOR Reduction (vph)	0	0	0	0	3	196	0	0	0	0	61	0
Lane Group Flow (vph)	0	0	0	451	722	425	309	569	0	0	1266	0
Turn Type				Perm	NA	Perm	Prot	NA			NA	
Protected Phases					2		7	4			8	
Permitted Phases				2		2						
Actuated Green, G (s)				46.4	46.4	46.4	24.5	64.6			35.6	
Effective Green, g (s)				48.9	48.9	48.9	27.0	67.1			38.1	
Actuated g/C Ratio				0.41	0.41	0.41	0.22	0.56			0.32	
Clearance Time (s)				4.5	4.5	4.5	4.5	4.5			4.5	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)				696	723	625	384	2018			1988	
v/s Ratio Prot					c0.41		c0.18	0.16			c0.20	
v/s Ratio Perm				0.26		0.28						
v/c Ratio				0.65	1.00	0.68	0.80	0.28			0.64	
Uniform Delay, d1				28.6	35.5	29.1	44.0	13.8			35.0	
Progression Factor				1.00	1.00	1.00	1.45	0.96			0.85	
Incremental Delay, d2				4.6	33.2	5.9	10.0	0.1			0.6	
Delay (s)				33.2	68.7	35.0	73.9	13.4			30.4	
Level of Service				C	E	D	E	B			C	
Approach Delay (s)		0.0			48.2			34.7			30.4	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	805	977	0	0	834	883	264	7	186	0	0	0
Future Volume (vph)	805	977	0	0	834	883	264	7	186	0	0	0
Ideal Flow (vphpl)	1800	1900	1900	1900	1900	1900	1800	1900	1900	1900	1900	1900
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.91	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.96	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.97	1.00			
Satd. Flow (prot)	1710	3610			5187	1615	1624	1603	1534			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.97	1.00			
Satd. Flow (perm)	1710	3610			5187	1615	1624	1603	1534			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	847	1028	0	0	878	929	278	7	196	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	232	0	11	123	0	0	0
Lane Group Flow (vph)	847	1028	0	0	878	697	167	152	28	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	48.5	91.5			38.5	38.5	19.5	19.5	19.5			
Effective Green, g (s)	51.0	94.0			41.0	41.0	22.0	22.0	22.0			
Actuated g/C Ratio	0.42	0.78			0.34	0.34	0.18	0.18	0.18			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	726	2827			1772	551	297	293	281			
v/s Ratio Prot	c0.50	0.28			0.17							
v/s Ratio Perm						c0.43	c0.10	0.09	0.02			
v/c Ratio	1.17	0.36			0.50	1.26	0.56	0.52	0.10			
Uniform Delay, d1	34.5	3.9			31.3	39.5	44.6	44.2	40.8			
Progression Factor	1.00	1.00			1.09	1.19	1.00	1.00	1.00			
Incremental Delay, d2	89.5	0.1			0.2	130.5	7.5	6.4	0.7			
Delay (s)	124.0	4.0			34.2	177.5	52.1	50.6	41.5			
Level of Service	F	A			C	F	D	D	D			
Approach Delay (s)		58.2			107.8			48.3			0.0	
Approach LOS		E			F			D			A	

Intersection Summary			
HCM 2000 Control Delay	78.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	121.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	108	694	96	3	149	482	905	22	63	302	384	165
Future Volume (vph)	108	694	96	3	149	482	905	22	63	302	384	165
Ideal Flow (vphpl)	1800	1900	1900	1900	1900	1700	1900	1900	1900	1700	1900	1900
Total Lost time (s)	2.0	2.0	2.0			2.0	2.0			2.0	2.0	2.0
Lane Util. Factor	1.00	*1.00	*1.00			*1.00	*1.00			*1.00	1.00	1.00
Frt	1.00	1.00	0.85			1.00	1.00			1.00	1.00	0.85
Flt Protected	1.00	1.00	1.00			1.00	1.00			1.00	1.00	1.00
Satd. Flow (prot)	1800	3792	1615			3400	3787			3400	1900	1615
Flt Permitted	1.00	1.00	1.00			1.00	1.00			1.00	1.00	1.00
Satd. Flow (perm)	1800	3792	1615			3400	3787			3400	1900	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	114	731	101	3	157	507	953	23	66	318	404	174
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	51
Lane Group Flow (vph)	114	741	94	0	0	664	976	0	0	384	404	123
Turn Type	Prot	NA	Prot		Prot	Prot	NA		Prot	Prot	NA	pm+ov
Protected Phases	7	4	4		3	3	8		5	5	2	3
Permitted Phases												2
Actuated Green, G (s)	8.5	24.5	24.5			23.5	39.5			12.5	26.5	50.0
Effective Green, g (s)	11.0	27.0	27.0			26.0	42.0			15.0	29.0	55.0
Actuated g/C Ratio	0.09	0.22	0.22			0.22	0.35			0.12	0.24	0.46
Clearance Time (s)	4.5	4.5	4.5			4.5	4.5			4.5	4.5	4.5
Lane Grp Cap (vph)	165	853	363			736	1325			425	459	767
v/s Ratio Prot	0.06	c0.20	0.06			c0.20	0.26			c0.11	c0.21	0.03
v/s Ratio Perm												0.04
v/c Ratio	0.69	0.87	0.26			0.90	0.74			0.90	0.88	0.16
Uniform Delay, d1	52.9	44.8	38.3			45.8	34.2			51.8	43.8	19.0
Progression Factor	0.94	0.98	0.98			0.63	1.02			1.00	1.00	1.00
Incremental Delay, d2	20.1	11.1	1.6			11.6	2.4			25.1	20.8	0.4
Delay (s)	69.9	54.9	39.2			40.5	37.3			76.9	64.6	19.4
Level of Service	E	D	D			D	D			E	E	B
Approach Delay (s)		55.2					38.6				61.4	
Approach LOS		E					D				E	

Intersection Summary			
HCM 2000 Control Delay	50.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	102.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	39	316	92	82	17	167	442	128
Future Volume (vph)	39	316	92	82	17	167	442	128
Ideal Flow (vphpl)	1800	1900	1900	1900	1700	1700	1900	1900
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	
Lane Util. Factor	1.00	*1.00			1.00	1.00	*1.00	
Frt	1.00	0.95			1.00	1.00	0.85	
Flt Protected	1.00	1.00			1.00	1.00	1.00	
Satd. Flow (prot)	1800	3598			1700	1700	3230	
Flt Permitted	1.00	1.00			1.00	1.00	1.00	
Satd. Flow (perm)	1800	3598			1700	1700	3230	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	333	97	86	18	176	465	135
RTOR Reduction (vph)	0	15	0	0	0	0	181	0
Lane Group Flow (vph)	41	501	0	0	18	176	419	0
Turn Type	Prot	NA			Prot	Prot	Perm	
Protected Phases	1	6			9	9		
Permitted Phases							9	
Actuated Green, G (s)	5.0	19.0			18.0	18.0	18.0	
Effective Green, g (s)	7.5	21.5			20.5	20.5	20.5	
Actuated g/C Ratio	0.06	0.18			0.17	0.17	0.17	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	
Lane Grp Cap (vph)	112	644			290	290	551	
v/s Ratio Prot	0.02	0.14			0.01	0.10		
v/s Ratio Perm							c0.13	
v/c Ratio	0.37	0.78			0.06	0.61	0.76	
Uniform Delay, d1	54.0	47.0			41.7	46.0	47.4	
Progression Factor	1.00	1.00			1.06	1.00	0.98	
Incremental Delay, d2	9.0	9.0			0.3	7.8	8.2	
Delay (s)	63.0	56.0			44.6	53.8	54.6	
Level of Service	E	E			D	D	D	
Approach Delay (s)		56.5				54.2		
Approach LOS		E				D		

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	1250	131	112	1310	49	265	382	122	52	405	102
Future Volume (vph)	95	1250	131	112	1310	49	265	382	122	52	405	102
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Total Lost time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.99		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1710	3559		1710	3590		1710	3479		1710	3501	
Flt Permitted	0.10	1.00		0.09	1.00		0.34	1.00		0.34	1.00	
Satd. Flow (perm)	172	3559		164	3590		610	3479		613	3501	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	100	1316	138	118	1379	52	279	402	128	55	426	107
RTOR Reduction (vph)	0	7	0	0	2	0	0	25	0	0	19	0
Lane Group Flow (vph)	100	1447	0	118	1429	0	279	505	0	55	515	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	67.5	67.5		67.5	67.5		43.5	43.5		43.5	43.5	
Effective Green, g (s)	70.0	70.0		70.0	70.0		46.0	46.0		46.0	46.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.38	0.38		0.38	0.38	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	100	2076		95	2094		233	1333		234	1342	
v/s Ratio Prot		0.41			0.40			0.15			0.15	
v/s Ratio Perm	0.58			c0.72			c0.46			0.09		
v/c Ratio	1.00	0.70		1.24	0.68		1.20	0.38		0.24	0.38	
Uniform Delay, d1	25.0	17.6		25.0	17.3		37.0	26.7		25.1	26.7	
Progression Factor	0.67	0.54		1.59	1.64		1.00	1.00		1.00	1.00	
Incremental Delay, d2	76.2	0.7		140.4	0.4		122.8	0.8		2.3	0.8	
Delay (s)	93.0	10.2		180.3	28.8		159.8	27.5		27.4	27.6	
Level of Service	F	B		F	C		F	C		C	C	
Approach Delay (s)		15.5			40.4			73.1			27.6	
Approach LOS		B			D			E			C	

Intersection Summary			
HCM 2000 Control Delay	36.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	883	292	226	981	251	263	873	138	213	1089	137
Future Volume (vph)	302	883	292	226	981	251	263	873	138	213	1089	137
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1710	3610	1615	1710	3610	1615	1710	5081		1710	5100	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1710	3610	1615	1710	3610	1615	1710	5081		1710	5100	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	318	929	307	238	1033	264	277	919	145	224	1146	144
RTOR Reduction (vph)	0	0	208	0	0	67	0	17	0	0	13	0
Lane Group Flow (vph)	318	929	99	238	1033	197	277	1047	0	224	1277	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	21.1	36.2	36.2	18.0	33.1	33.1	18.2	30.9		16.9	29.6	
Effective Green, g (s)	23.6	38.7	38.7	20.5	35.6	35.6	20.7	33.4		19.4	32.1	
Actuated g/C Ratio	0.20	0.32	0.32	0.17	0.30	0.30	0.17	0.28		0.16	0.27	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	336	1164	520	292	1070	479	294	1414		276	1364	
v/s Ratio Prot	c0.19	0.26		0.14	c0.29		c0.16	0.21		0.13	c0.25	
v/s Ratio Perm			0.06			0.12						
v/c Ratio	0.95	0.80	0.19	0.82	0.97	0.41	0.94	0.74		0.81	0.94	
Uniform Delay, d1	47.6	37.1	29.3	47.9	41.6	33.8	49.1	39.4		48.5	42.9	
Progression Factor	0.65	1.05	4.21	0.78	1.43	1.76	1.00	1.00		1.00	1.00	
Incremental Delay, d2	29.7	3.0	0.1	14.7	18.4	0.5	37.1	3.5		16.4	13.2	
Delay (s)	60.7	42.1	123.5	52.0	78.0	60.0	86.2	42.9		64.9	56.2	
Level of Service	E	D	F	D	E	E	F	D		E	E	
Approach Delay (s)		62.0			70.8			51.8			57.5	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	60.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	195	1086	1038	68	180	225
Future Volume (vph)	195	1086	1038	68	180	225
Ideal Flow (vphpl)	1800	1900	1900	1900	1700	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.95	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.97	1.00
Satd. Flow (prot)	1710	3610	3610	1615	3026	1470
Flt Permitted	0.10	1.00	1.00	1.00	0.97	1.00
Satd. Flow (perm)	177	3610	3610	1615	3026	1470
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	205	1143	1093	72	189	237
RTOR Reduction (vph)	0	0	0	42	53	83
Lane Group Flow (vph)	205	1143	1093	30	238	52
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	67.4	67.4	47.9	47.9	43.6	43.6
Effective Green, g (s)	69.9	69.9	50.4	50.4	46.1	46.1
Actuated g/C Ratio	0.58	0.58	0.42	0.42	0.38	0.38
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	326	2102	1516	678	1162	564
v/s Ratio Prot	c0.09	0.32	c0.30		c0.08	
v/s Ratio Perm	0.27			0.02		0.04
v/c Ratio	0.63	0.54	0.72	0.04	0.20	0.09
Uniform Delay, d1	23.1	15.3	29.0	20.6	24.7	23.6
Progression Factor	1.05	2.02	0.89	0.50	1.00	1.00
Incremental Delay, d2	2.4	0.2	1.6	0.0	0.4	0.3
Delay (s)	26.6	31.2	27.5	10.2	25.1	23.9
Level of Service	C	C	C	B	C	C
Approach Delay (s)		30.5	26.4		24.7	
Approach LOS		C	C		C	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	493	10	663	39	30	3	392	1606	18	10	1392	410
Future Volume (vph)	493	10	663	39	30	3	392	1606	18	10	1392	410
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1800	1900	1900	1800	1900	1900
Total Lost time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1624	1722	1615	1710	3610	1615	1710	5178		1710	3610	1615
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1624	1722	1615	1710	3610	1615	1710	5178		1710	3610	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	519	11	698	41	32	3	413	1691	19	11	1465	432
RTOR Reduction (vph)	0	0	125	0	0	3	0	1	0	0	0	168
Lane Group Flow (vph)	265	265	573	41	32	0	413	1709	0	11	1465	264
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4			8						6
Actuated Green, G (s)	18.0	18.0	53.2	7.2	7.2	7.2	35.2	75.2		1.6	41.6	59.6
Effective Green, g (s)	20.5	20.5	58.2	9.7	9.7	9.7	37.7	77.7		4.1	44.1	64.6
Actuated g/C Ratio	0.17	0.17	0.49	0.08	0.08	0.08	0.31	0.65		0.03	0.37	0.54
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	277	294	783	138	291	130	537	3352		58	1326	896
v/s Ratio Prot	c0.16	0.15	0.23	c0.02	0.01		c0.24	0.33		0.01	c0.41	0.05
v/s Ratio Perm			0.12			0.00						0.11
v/c Ratio	0.96	0.90	0.73	0.30	0.11	0.00	0.77	0.51		0.19	1.10	0.30
Uniform Delay, d1	49.3	48.8	24.7	51.9	51.1	50.7	37.2	11.1		56.3	37.9	15.2
Progression Factor	1.03	1.03	2.43	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	40.0	27.0	3.3	1.2	0.2	0.0	6.6	0.6		1.6	58.7	0.2
Delay (s)	91.0	77.5	63.1	53.1	51.3	50.7	43.8	11.7		57.9	96.6	15.4
Level of Service	F	E	E	D	D	D	D	B		E	F	B
Approach Delay (s)		72.2			52.3			17.9			78.0	
Approach LOS		E			D			B			E	

Intersection Summary			
HCM 2000 Control Delay	52.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: I-215 NB Off Ramp/I-215 NB On Ramp & W Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	441	771	0	0	328	168	192	2	80	0	0	0
Future Volume (vph)	441	771	0	0	328	168	192	2	80	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.86	0.86	0.95	0.91	0.95			
Frt	1.00	1.00			0.98	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4540	1316	1534	1548	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4540	1316	1534	1548	1454			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	474	829	0	0	353	181	206	2	86	0	0	0
RTOR Reduction (vph)	0	0	0	0	19	100	0	2	45	0	0	0
Lane Group Flow (vph)	474	829	0	0	396	19	109	106	32	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	43.2	64.1			16.4	16.4	46.9	46.9	46.9			
Effective Green, g (s)	45.7	66.6			18.9	18.9	49.4	49.4	49.4			
Actuated g/C Ratio	0.38	0.55			0.16	0.16	0.41	0.41	0.41			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	615	1898			715	207	631	637	598			
v/s Ratio Prot	c0.29	0.24			c0.09							
v/s Ratio Perm						0.01	c0.07	0.07	0.02			
v/c Ratio	0.77	0.44			0.55	0.09	0.17	0.17	0.05			
Uniform Delay, d1	32.6	15.7			46.7	43.2	22.4	22.3	21.2			
Progression Factor	1.00	1.00			0.82	2.52	1.00	1.00	1.00			
Incremental Delay, d2	5.9	0.2			0.9	0.2	0.6	0.6	0.2			
Delay (s)	38.5	15.8			39.0	108.9	23.0	22.9	21.4			
Level of Service	D	B			D	F	C	C	C			
Approach Delay (s)		24.1			54.6			22.5			0.0	
Approach LOS		C			D			C			A	

Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	441	771	0	0	328	168	192	2	80	0	0	0
Future Volume (veh/h)	441	771	0	0	328	168	192	2	80	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	474	829	0	0	424	134	234	0	58			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	531	1749	0	0	901	255	1474	0	696			
Arrive On Green	0.33	0.51	0.00	0.00	0.17	0.17	0.46	0.00	0.46			
Sat Flow, veh/h	1619	3510	0	0	5400	1530	3238	0	1530			
Grp Volume(v), veh/h	474	829	0	0	424	134	234	0	58			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1800	1530	1619	0	1530			
Q Serve(g_s), s	33.4	18.8	0.0	0.0	8.5	9.6	5.1	0.0	2.6			
Cycle Q Clear(g_c), s	33.4	18.8	0.0	0.0	8.5	9.6	5.1	0.0	2.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	531	1749	0	0	901	255	1474	0	696			
V/C Ratio(X)	0.89	0.47	0.00	0.00	0.47	0.53	0.16	0.00	0.08			
Avail Cap(c_a), veh/h	863	2565	0	0	1080	306	1474	0	696			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.96	0.96	1.00	0.00	1.00			
Uniform Delay (d), s/veh	38.3	18.9	0.0	0.0	45.2	45.7	19.2	0.0	18.5			
Incr Delay (d2), s/veh	7.2	0.2	0.0	0.0	0.4	1.6	0.2	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	15.9	8.9	0.0	0.0	4.3	4.2	2.3	0.0	1.1			
LnGrp Delay(d),s/veh	45.5	19.1	0.0	0.0	45.6	47.3	19.4	0.0	18.7			
LnGrp LOS	D	B			D	D	B		B			
Approach Vol, veh/h		1303			558			292				
Approach Delay, s/veh		28.7			46.0			19.3				
Approach LOS		C			D			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		56.6		63.4			41.4	22.0
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		23.5		87.5			61.5	21.5
Max Q Clear Time (g_c+I1), s		7.1		20.8			35.4	11.6
Green Ext Time (p_c), s		0.9		13.0			1.5	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	31.9
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.78	2.60	2.06	2.06
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1303	534	294	0
Effct. Green for Bike (s)	66.6	18.9	49.4	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1110	315	823	0
Bicycle Delay (s/bike)	11.9	42.6	20.8	0.0
Bicycle Compliance	Fair	Poor	Fair	
Bicycle LOS Score	3.21	2.25	3.15	0.00
Bicycle LOS	C	B	C	

HCM Signalized Intersection Capacity Analysis
3: I-215 NB Off Ramp/I-215 NB On Ramp & W Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	528	718	0	0	571	473	239	5	75	0	0	0
Future Volume (vph)	528	718	0	0	571	473	239	5	75	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.86	0.86	0.95	0.91	0.95			
Frt	1.00	1.00			0.96	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4443	1316	1534	1553	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4443	1316	1534	1553	1454			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	562	764	0	0	607	503	254	5	80	0	0	0
RTOR Reduction (vph)	0	0	0	0	61	190	0	1	52	0	0	0
Lane Group Flow (vph)	562	764	0	0	792	67	135	131	20	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	47.5	80.7			28.7	28.7	30.3	30.3	30.3			
Effective Green, g (s)	50.0	83.2			31.2	31.2	32.8	32.8	32.8			
Actuated g/C Ratio	0.42	0.69			0.26	0.26	0.27	0.27	0.27			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	672	2371			1155	342	419	424	397			
v/s Ratio Prot	c0.35	0.22			c0.18							
v/s Ratio Perm						0.05	c0.09	0.08	0.01			
v/c Ratio	0.84	0.32			0.69	0.20	0.32	0.31	0.05			
Uniform Delay, d1	31.3	7.3			40.0	34.6	34.7	34.6	32.1			
Progression Factor	1.00	1.00			0.98	2.80	1.00	1.00	1.00			
Incremental Delay, d2	8.9	0.1			1.5	0.3	2.0	1.9	0.2			
Delay (s)	40.2	7.3			40.6	97.0	36.8	36.5	32.4			
Level of Service	D	A			D	F	D	D	C			
Approach Delay (s)		21.3			53.7			35.7			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	36.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	528	718	0	0	571	473	239	5	75	0	0	0
Future Volume (veh/h)	528	718	0	0	571	473	239	5	75	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	562	764	0	0	607	503	281	0	55			
Adj No. of Lanes	1	2	0	0	2	2	2	0	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	616	2199	0	0	885	752	1048	0	495			
Arrive On Green	0.38	0.64	0.00	0.00	0.25	0.25	0.32	0.00	0.32			
Sat Flow, veh/h	1619	3510	0	0	3600	3060	3238	0	1530			
Grp Volume(v), veh/h	562	764	0	0	607	503	281	0	55			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1800	1530	1619	0	1530			
Q Serve(g_s), s	39.5	12.3	0.0	0.0	18.4	17.8	7.7	0.0	3.0			
Cycle Q Clear(g_c), s	39.5	12.3	0.0	0.0	18.4	17.8	7.7	0.0	3.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	616	2199	0	0	885	752	1048	0	495			
V/C Ratio(X)	0.91	0.35	0.00	0.00	0.69	0.67	0.27	0.00	0.11			
Avail Cap(c_a), veh/h	783	2622	0	0	960	816	1048	0	495			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.81	0.81	1.00	0.00	1.00			
Uniform Delay (d), s/veh	35.3	9.9	0.0	0.0	41.1	40.8	30.0	0.0	28.5			
Incr Delay (d2), s/veh	12.8	0.1	0.0	0.0	1.5	1.5	0.6	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	19.8	5.8	0.0	0.0	9.3	7.7	3.5	0.0	1.3			
LnGrp Delay(d),s/veh	48.1	9.9	0.0	0.0	42.6	42.4	30.7	0.0	28.9			
LnGrp LOS	D	A			D	D	C		C			
Approach Vol, veh/h		1326			1110			336				
Approach Delay, s/veh		26.1			42.5			30.4				
Approach LOS		C			D			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		40.9		79.1			47.7	31.5
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		21.5		89.5			55.5	29.5
Max Q Clear Time (g_c+I1), s		9.7		14.3			41.5	20.4
Green Ext Time (p_c), s		0.9		19.4			1.6	6.6

Intersection Summary	
HCM 2010 Ctrl Delay	33.2
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.83	2.70	2.07	2.26
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1326	1110	339	0
Effct. Green for Bike (s)	83.2	31.2	32.8	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1387	520	547	0
Bicycle Delay (s/bike)	5.6	32.9	31.7	0.0
Bicycle Compliance	Good	Poor	Poor	
Bicycle LOS Score	3.23	2.56	3.23	0.00
Bicycle LOS	C	B	C	

HCM 2010 Signalized Intersection Summary
3: I-215 NB Off Ramp/I-215 NB On Ramp & W Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	467	816	0	0	348	178	204	2	85	0	0	0
Future Volume (veh/h)	467	816	0	0	348	178	204	2	85	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	502	877	0	0	449	141	248	0	61			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	559	1810	0	0	904	256	1417	0	669			
Arrive On Green	0.35	0.53	0.00	0.00	0.17	0.17	0.44	0.00	0.44			
Sat Flow, veh/h	1619	3510	0	0	5400	1530	3238	0	1530			
Grp Volume(v), veh/h	502	877	0	0	449	141	248	0	61			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1800	1530	1619	0	1530			
Q Serve(g_s), s	35.3	19.5	0.0	0.0	9.1	10.1	5.6	0.0	2.8			
Cycle Q Clear(g_c), s	35.3	19.5	0.0	0.0	9.1	10.1	5.6	0.0	2.8			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	559	1810	0	0	904	256	1417	0	669			
V/C Ratio(X)	0.90	0.48	0.00	0.00	0.50	0.55	0.18	0.00	0.09			
Avail Cap(c_a), veh/h	863	2537	0	0	1035	293	1417	0	669			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.96	0.96	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.3	17.9	0.0	0.0	45.4	45.8	20.6	0.0	19.8			
Incr Delay (d2), s/veh	8.3	0.2	0.0	0.0	0.4	1.8	0.3	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	17.0	9.2	0.0	0.0	4.5	4.4	2.6	0.0	1.2			
LnGrp Delay(d),s/veh	45.6	18.1	0.0	0.0	45.8	47.6	20.8	0.0	20.0			
LnGrp LOS	D	B			D	D	C		C			
Approach Vol, veh/h		1379			590			309				
Approach Delay, s/veh		28.1			46.2			20.7				
Approach LOS		C			D			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		54.5		65.5			43.4	22.1
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		24.5		86.5			61.5	20.5
Max Q Clear Time (g_c+I1), s		7.6		21.5			37.3	12.1
Green Ext Time (p_c), s		0.9		14.2			1.6	5.4

Intersection Summary	
HCM 2010 Ctrl Delay	31.8
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.79	2.62	2.06	2.08
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1379	565	312	0
Effct. Green for Bike (s)	69.9	20.0	46.1	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1165	333	768	0
Bicycle Delay (s/bike)	10.5	41.7	22.8	0.0
Bicycle Compliance	Fair	Poor	Fair	
Bicycle LOS Score	3.27	2.27	3.18	0.00
Bicycle LOS	C	B	C	

HCM Signalized Intersection Capacity Analysis
3: I-215 NB Off Ramp/I-215 NB On Ramp & W Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	560	761	0	0	605	500	253	5	80	0	0	0
Future Volume (vph)	560	761	0	0	605	500	253	5	80	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.86	0.86	0.95	0.91	0.95			
Frt	1.00	1.00			0.96	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4443	1316	1534	1552	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4443	1316	1534	1552	1454			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	596	810	0	0	644	532	269	5	85	0	0	0
RTOR Reduction (vph)	0	0	0	0	61	199	0	2	57	0	0	0
Lane Group Flow (vph)	596	810	0	0	844	72	143	138	19	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	49.7	83.7			29.5	29.5	27.3	27.3	27.3			
Effective Green, g (s)	52.2	86.2			32.0	32.0	29.8	29.8	29.8			
Actuated g/C Ratio	0.44	0.72			0.27	0.27	0.25	0.25	0.25			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	702	2456			1184	350	380	385	361			
v/s Ratio Prot	c0.37	0.24			c0.19							
v/s Ratio Perm						0.05	c0.09	0.09	0.01			
v/c Ratio	0.85	0.33			0.71	0.21	0.38	0.36	0.05			
Uniform Delay, d1	30.4	6.2			39.8	34.1	37.4	37.2	34.3			
Progression Factor	1.00	1.00			0.94	2.78	1.00	1.00	1.00			
Incremental Delay, d2	9.4	0.1			1.8	0.3	2.8	2.6	0.3			
Delay (s)	39.8	6.3			39.1	95.0	40.2	39.8	34.6			
Level of Service	D	A			D	F	D	D	C			
Approach Delay (s)		20.5			52.0			38.9			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	560	761	0	0	605	500	253	5	80	0	0	0
Future Volume (veh/h)	560	761	0	0	605	500	253	5	80	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	596	810	0	0	644	532	297	0	58			
Adj No. of Lanes	1	2	0	0	2	2	2	0	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	649	2288	0	0	906	770	964	0	456			
Arrive On Green	0.40	0.67	0.00	0.00	0.25	0.25	0.30	0.00	0.30			
Sat Flow, veh/h	1619	3510	0	0	3600	3060	3238	0	1530			
Grp Volume(v), veh/h	596	810	0	0	644	532	297	0	58			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1800	1530	1619	0	1530			
Q Serve(g_s), s	41.9	12.3	0.0	0.0	19.6	18.9	8.5	0.0	3.3			
Cycle Q Clear(g_c), s	41.9	12.3	0.0	0.0	19.6	18.9	8.5	0.0	3.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	649	2288	0	0	906	770	964	0	456			
V/C Ratio(X)	0.92	0.35	0.00	0.00	0.71	0.69	0.31	0.00	0.13			
Avail Cap(c_a), veh/h	796	2651	0	0	960	816	964	0	456			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.77	0.77	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.1	8.6	0.0	0.0	40.9	40.7	32.6	0.0	30.8			
Incr Delay (d2), s/veh	13.8	0.1	0.0	0.0	1.8	1.8	0.8	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	21.2	5.8	0.0	0.0	10.0	8.2	3.9	0.0	1.5			
LnGrp Delay(d),s/veh	47.9	8.7	0.0	0.0	42.7	42.5	33.4	0.0	31.3			
LnGrp LOS	D	A			D	D	C		C			
Approach Vol, veh/h		1406			1176			355				
Approach Delay, s/veh		25.3			42.6			33.1				
Approach LOS		C			D			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		37.7		82.3			50.1	32.2
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		20.5		90.5			56.5	29.5
Max Q Clear Time (g_c+I1), s		10.5		14.3			43.9	21.6
Green Ext Time (p_c), s		0.9		21.7			1.7	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	33.2
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.85	2.73	2.08	2.29
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1406	1176	359	0
Effct. Green for Bike (s)	86.1	32.0	29.9	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1435	533	498	0
Bicycle Delay (s/bike)	4.8	32.3	33.8	0.0
Bicycle Compliance	Good	Poor	Poor	
Bicycle LOS Score	3.30	2.60	3.26	0.00
Bicycle LOS	C	B	C	

HCM Signalized Intersection Capacity Analysis
3: I-215 NB Off Ramp/I-215 NB On Ramp & W Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	467	890	0	0	386	205	204	2	85	0	0	0
Future Volume (vph)	467	890	0	0	386	205	204	2	85	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.86	0.86	0.95	0.91	0.95			
Frt	1.00	1.00			0.98	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4535	1316	1534	1549	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4535	1316	1534	1549	1454			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	502	957	0	0	415	220	219	2	91	0	0	0
RTOR Reduction (vph)	0	0	0	0	21	117	0	2	52	0	0	0
Lane Group Flow (vph)	502	957	0	0	471	26	116	112	30	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	45.4	68.9			19.0	19.0	42.1	42.1	42.1			
Effective Green, g (s)	47.9	71.4			21.5	21.5	44.6	44.6	44.6			
Actuated g/C Ratio	0.40	0.60			0.18	0.18	0.37	0.37	0.37			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	644	2034			812	235	570	575	540			
v/s Ratio Prot	c0.31	0.28			c0.10							
v/s Ratio Perm						0.02	c0.08	0.07	0.02			
v/c Ratio	0.78	0.47			0.58	0.11	0.20	0.19	0.06			
Uniform Delay, d1	31.4	13.7			45.1	41.2	25.6	25.5	24.2			
Progression Factor	1.00	1.00			0.78	2.55	1.00	1.00	1.00			
Incremental Delay, d2	5.9	0.2			1.0	0.2	0.8	0.8	0.2			
Delay (s)	37.4	13.8			36.1	105.1	26.4	26.3	24.4			
Level of Service	D	B			D	F	C	C	C			
Approach Delay (s)		21.9			51.7			25.8			0.0	
Approach LOS		C			D			C			A	

Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	467	890	0	0	386	205	204	2	85	0	0	0
Future Volume (veh/h)	467	890	0	0	386	205	204	2	85	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	502	957	0	0	507	159	248	0	61			
Adj No. of Lanes	1	2	0	0	3	1	2	0	1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	559	1853	0	0	972	276	1376	0	650			
Arrive On Green	0.35	0.54	0.00	0.00	0.18	0.18	0.42	0.00	0.42			
Sat Flow, veh/h	1619	3510	0	0	5400	1530	3238	0	1530			
Grp Volume(v), veh/h	502	957	0	0	507	159	248	0	61			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1800	1530	1619	0	1530			
Q Serve(g_s), s	35.3	21.4	0.0	0.0	10.2	11.4	5.7	0.0	2.9			
Cycle Q Clear(g_c), s	35.3	21.4	0.0	0.0	10.2	11.4	5.7	0.0	2.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	559	1853	0	0	972	276	1376	0	650			
V/C Ratio(X)	0.90	0.52	0.00	0.00	0.52	0.58	0.18	0.00	0.09			
Avail Cap(c_a), veh/h	863	2565	0	0	1080	306	1376	0	650			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.94	0.94	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.3	17.5	0.0	0.0	44.5	45.0	21.5	0.0	20.7			
Incr Delay (d2), s/veh	8.3	0.2	0.0	0.0	0.4	2.0	0.3	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	17.0	10.0	0.0	0.0	5.1	5.0	2.6	0.0	1.3			
LnGrp Delay(d),s/veh	45.6	17.7	0.0	0.0	44.9	47.0	21.8	0.0	21.0			
LnGrp LOS	D	B			D	D	C		C			
Approach Vol, veh/h		1459			666			309				
Approach Delay, s/veh		27.3			45.4			21.6				
Approach LOS		C			D			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		53.0		67.0			43.4	23.6
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		23.5		87.5			61.5	21.5
Max Q Clear Time (g_c+I1), s		7.7		23.4			37.3	13.4
Green Ext Time (p_c), s		0.9		16.8			1.6	5.7

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.81	2.65	2.06	2.09
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1459	635	312	0
Effct. Green for Bike (s)	71.4	21.5	44.6	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1190	358	743	0
Bicycle Delay (s/bike)	9.8	40.4	23.7	0.0
Bicycle Compliance	Good	Poor	Fair	
Bicycle LOS Score	3.34	2.30	3.18	0.00
Bicycle LOS	C	B	C	

HCM Signalized Intersection Capacity Analysis
3: I-215 NB Off Ramp/I-215 NB On Ramp & W Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	560	806	0	0	623	536	253	5	80	0	0	0
Future Volume (vph)	560	806	0	0	623	536	253	5	80	0	0	0
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Total Lost time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Util. Factor	1.00	0.95			0.86	0.86	0.95	0.91	0.95			
Frt	1.00	1.00			0.95	0.85	1.00	0.99	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	1615	3420			4435	1316	1534	1552	1454			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	1615	3420			4435	1316	1534	1552	1454			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	596	857	0	0	663	570	269	5	85	0	0	0
RTOR Reduction (vph)	0	0	0	0	65	205	0	2	58	0	0	0
Lane Group Flow (vph)	596	857	0	0	883	80	143	138	18	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Actuated Green, G (s)	48.8	84.3			31.0	31.0	26.7	26.7	26.7			
Effective Green, g (s)	51.3	86.8			33.5	33.5	29.2	29.2	29.2			
Actuated g/C Ratio	0.43	0.72			0.28	0.28	0.24	0.24	0.24			
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	690	2473			1238	367	373	377	353			
v/s Ratio Prot	c0.37	0.25			c0.20							
v/s Ratio Perm						0.06	c0.09	0.09	0.01			
v/c Ratio	0.86	0.35			0.71	0.22	0.38	0.37	0.05			
Uniform Delay, d1	31.2	6.1			38.9	33.2	37.9	37.7	34.8			
Progression Factor	1.00	1.00			0.93	2.73	1.00	1.00	1.00			
Incremental Delay, d2	10.9	0.1			1.7	0.3	3.0	2.7	0.3			
Delay (s)	42.1	6.2			37.7	90.8	40.9	40.4	35.1			
Level of Service	D	A			D	F	D	D	D			
Approach Delay (s)		20.9			50.0			39.5			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	560	806	0	0	623	536	253	5	80	0	0	0
Future Volume (veh/h)	560	806	0	0	623	536	253	5	80	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1700	1800	0	0	1800	1800	1700	1800	1800			
Adj Flow Rate, veh/h	596	857	0	0	663	570	297	0	58			
Adj No. of Lanes	1	2	0	0	2	2	2	0	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	648	2335	0	0	957	814	920	0	435			
Arrive On Green	0.40	0.68	0.00	0.00	0.27	0.27	0.28	0.00	0.28			
Sat Flow, veh/h	1619	3510	0	0	3600	3060	3238	0	1530			
Grp Volume(v), veh/h	596	857	0	0	663	570	297	0	58			
Grp Sat Flow(s),veh/h/ln	1619	1710	0	0	1800	1530	1619	0	1530			
Q Serve(g_s), s	41.9	12.7	0.0	0.0	19.9	20.2	8.7	0.0	3.4			
Cycle Q Clear(g_c), s	41.9	12.7	0.0	0.0	19.9	20.2	8.7	0.0	3.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	648	2335	0	0	957	814	920	0	435			
V/C Ratio(X)	0.92	0.37	0.00	0.00	0.69	0.70	0.32	0.00	0.13			
Avail Cap(c_a), veh/h	769	2651	0	0	1020	867	920	0	435			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.74	0.74	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.2	8.1	0.0	0.0	39.6	39.7	33.9	0.0	32.0			
Incr Delay (d2), s/veh	14.7	0.1	0.0	0.0	1.4	1.7	0.9	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	21.4	6.0	0.0	0.0	10.0	8.7	4.0	0.0	1.5			
LnGrp Delay(d),s/veh	48.9	8.2	0.0	0.0	41.0	41.5	34.8	0.0	32.6			
LnGrp LOS	D	A			D	D	C		C			
Approach Vol, veh/h		1453			1233			355				
Approach Delay, s/veh		24.9			41.2			34.4				
Approach LOS		C			D			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		36.1		83.9			50.0	33.9
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		20.5		90.5			54.5	31.5
Max Q Clear Time (g_c+I1), s		10.7		14.7			43.9	22.2
Green Ext Time (p_c), s		0.9		23.8			1.6	7.2

Intersection Summary	
HCM 2010 Ctrl Delay	32.6
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	72.3	37.7	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	5	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.86	2.75	2.08	2.31
Pedestrian Crosswalk LOS	C	B	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1453	1233	359	0
Effct. Green for Bike (s)	86.8	33.5	29.2	0.0
Cross Street Width (ft)	37.7	25.8	72.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1447	558	487	0
Bicycle Delay (s/bike)	4.6	31.2	34.4	0.0
Bicycle Compliance	Good	Poor	Poor	
Bicycle LOS Score	3.34	2.63	3.26	0.00
Bicycle LOS	C	B	C	

HCM 2010 Signalized Intersection Summary
3: I-215 NB Off Ramp/I-215 NB On Ramp & W Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	671	1430	0	0	452	291	293	3	114	0	0	0
Future Volume (veh/h)	671	1430	0	0	452	291	293	3	114	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	706	1505	0	0	428	338	347	0	81			
Adj No. of Lanes	1	2	0	0	2	2	2	0	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	770	2216	0	0	653	555	1276	0	570			
Arrive On Green	0.43	0.61	0.00	0.00	0.17	0.17	0.35	0.00	0.35			
Sat Flow, veh/h	1810	3705	0	0	3800	3230	3619	0	1615			
Grp Volume(v), veh/h	706	1505	0	0	428	338	347	0	81			
Grp Sat Flow(s),veh/h/ln	1810	1805	0	0	1900	1615	1810	0	1615			
Q Serve(g_s), s	44.1	33.1	0.0	0.0	12.6	11.6	8.2	0.0	4.1			
Cycle Q Clear(g_c), s	44.1	33.1	0.0	0.0	12.6	11.6	8.2	0.0	4.1			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	770	2216	0	0	653	555	1276	0	570			
V/C Ratio(X)	0.92	0.68	0.00	0.00	0.66	0.61	0.27	0.00	0.14			
Avail Cap(c_a), veh/h	1056	2798	0	0	665	565	1276	0	570			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.82	0.82	1.00	0.00	1.00			
Uniform Delay (d), s/veh	32.5	15.3	0.0	0.0	46.4	46.0	27.8	0.0	26.5			
Incr Delay (d2), s/veh	9.8	0.5	0.0	0.0	1.9	1.5	0.5	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	24.1	16.4	0.0	0.0	6.8	5.3	4.2	0.0	1.9			
LnGrp Delay(d),s/veh	42.3	15.8	0.0	0.0	48.3	47.5	28.3	0.0	27.0			
LnGrp LOS	D	B			D	D	C		C			
Approach Vol, veh/h		2211			766			428				
Approach Delay, s/veh		24.3			47.9			28.1				
Approach LOS		C			D			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		44.3		75.7			53.1	22.6
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		20.5		90.5			67.5	18.5
Max Q Clear Time (g_c+I1), s		10.2		35.1			46.1	14.6
Green Ext Time (p_c), s		1.1		29.0			2.4	3.5

Intersection Summary	
HCM 2010 Ctrl Delay	30.1
HCM 2010 LOS	C

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	84.3	36.0	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.96	2.87	2.10	2.23
Pedestrian Crosswalk LOS	C	C	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	2211	782	431	0
Effct. Green for Bike (s)	85.2	21.8	30.8	0.0
Cross Street Width (ft)	36.0	25.8	84.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1420	363	513	0
Bicycle Delay (s/bike)	5.0	40.2	33.2	0.0
Bicycle Compliance	Good	Poor	Poor	
Bicycle LOS Score	3.93	2.38	3.56	0.00
Bicycle LOS	D	B	D	

HCM 2010 Signalized Intersection Summary
3: I-215 NB Off Ramp/I-215 NB On Ramp & W Mill Street

10/31/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	805	977	0	0	834	883	264	7	186	0	0	0
Future Volume (veh/h)	805	977	0	0	834	883	264	7	186	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	847	1028	0	0	878	929	342	0	133			
Adj No. of Lanes	1	2	0	0	2	2	2	0	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	769	2819	0	0	1289	1095	673	0	300			
Arrive On Green	0.43	0.78	0.00	0.00	0.34	0.34	0.19	0.00	0.19			
Sat Flow, veh/h	1810	3705	0	0	3800	3230	3619	0	1615			
Grp Volume(v), veh/h	847	1028	0	0	878	929	342	0	133			
Grp Sat Flow(s),veh/h/ln	1810	1805	0	0	1900	1615	1810	0	1615			
Q Serve(g_s), s	51.0	10.5	0.0	0.0	23.8	32.0	10.2	0.0	8.8			
Cycle Q Clear(g_c), s	51.0	10.5	0.0	0.0	23.8	32.0	10.2	0.0	8.8			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	769	2819	0	0	1289	1095	673	0	300			
V/C Ratio(X)	1.10	0.36	0.00	0.00	0.68	0.85	0.51	0.00	0.44			
Avail Cap(c_a), veh/h	769	2828	0	0	1298	1104	673	0	300			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.54	0.54	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.5	4.0	0.0	0.0	34.1	36.8	43.9	0.0	43.3			
Incr Delay (d2), s/veh	63.8	0.1	0.0	0.0	0.8	3.5	2.7	0.0	4.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	39.0	5.2	0.0	0.0	12.6	14.9	5.3	0.0	4.3			
LnGrp Delay(d),s/veh	98.3	4.1	0.0	0.0	34.9	40.3	46.6	0.0	48.0			
LnGrp LOS	F	A			C	D	D		D			
Approach Vol, veh/h		1875			1807			475				
Approach Delay, s/veh		46.7			37.7			47.0				
Approach LOS		D			D			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		24.3		95.7			53.0	42.7
Change Period (Y+Rc), s		4.5		4.5			4.5	4.5
Max Green Setting (Gmax), s		19.5		91.5			48.5	38.5
Max Q Clear Time (g_c+I1), s		12.2		12.5			53.0	34.0
Green Ext Time (p_c), s		1.0		41.8			0.0	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	42.8
HCM 2010 LOS	D

Notes

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	72.2	84.3	36.0	25.8
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	6	6	3	2
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	0	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	30	30	30
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	60.0	60.0	60.0	60.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.97	2.97	2.12	2.61
Pedestrian Crosswalk LOS	C	C	B	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1875	1807	481	0
Effct. Green for Bike (s)	94.0	41.0	22.0	0.0
Cross Street Width (ft)	36.0	25.8	84.3	72.2
Through Lanes Number	2	3	1	0
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	1567	683	367	0
Bicycle Delay (s/bike)	2.8	26.0	40.0	0.0
Bicycle Compliance	Good	Fair	Poor	
Bicycle LOS Score	3.66	2.95	3.64	0.00
Bicycle LOS	D	C	D	