MITIGATED NEGATIVE DECLARATION

July 19, 2016

PROJECT NAME: IPT I-215 Distribution Center II (Georgia)

PROJECT NUMBERS: Development Permit Type D – 16-11

This Document is Considered Draft Until it is Adopted by the Appropriate City of San Bernardino Decision-Making Body.

This Mitigated Negative Declaration is comprised of this form along with the Environmental Initial Study that includes the following:

a. Initial Study Form
b. Environmental Analysis Form and attached extended studies for Air Quality and Greenhouse Gas Emissions, Cultural Resources, Geotechnical Report, and Traffic and Transportation.

1. California Environmental Quality Act Negative Declaration Findings:

Find, that this Mitigated Negative Declaration reflects the decision-making body's independent judgment and analysis, and; that the decision-making body has reviewed and considered the information contained in this Mitigated Negative Declaration and the comments received during the public review period; and that revisions in the project plans or proposals made by or agreed to by the project applicant would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and, on the basis of the whole record before the decision-making body (including this Mitigated Negative Declaration) that there is no substantial evidence that the project as revised will have a significant effect on the environment.

2. Required Project Design Elements and Mitigation Measures:

The following project design elements and mitigation measures were either proposed in the project application or the result of compliance with specific environmental laws and regulations and were essential in reaching the conclusions within the attached Environmental Initial Study. Both the project design elements and the mitigation measures must be assured to avoid potentially significant environmental effects.

Refer to the attached Environmental Initial Study for the rationale for requiring the following mitigation measures:

Biological Resources

B-1a Trees and other suitable nesting habitat within the limits of work shall be surveyed by a qualified biologist prior to initiating ground disturbing activities. A pre-construction survey would be conducted no more than 72 hours prior to the start of work. If no active nests are observed, construction activities should be initiated within 72 hours. If more than 72 hours pass and construction has not been initiated, another survey would be required.

B-1b If, during the breeding season (typically March through August), an active nest is discovered in a tree or shrub to be removed, the tree or shrub shall be protected using orange construction fence or the equivalent. The protective fencing shall be placed around the tree or shrub at the following distance depending on species and as determined by a qualified biologist: 25 feet from the drip line of the tree or shrub for passerines and non-raptors; 300 feet from the drip line of the tree for raptors. No parking, storage of materials, or work would be allowed within this area until the end of the breeding season or until the young have fledged, as determined by a qualified biologist.

Cultural Resources

CR-1 Prior to beginning project construction, the Project applicant shall retain an archaeological monitor to monitor initial ground-disturbing activities in an effort to identify any unknown archaeological resources. Any newly discovered cultural resource deposits shall be subject to a cultural resources evaluation.

Geology and Soils

G-1 All grading and construction of the project site shall comply with the geotechnical recommendations contained in the Geotechnical Engineering Investigation prepared by Southern California Geotechnical dated November 2015. All recommendations contained in the report shall be incorporated into all final and engineering and grading plans subject to the review and approval of the City of San Bernardino Community Development Department.

Noise

<u>Construction</u>

N-2 The contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

N-3 Equipment shall be shut off and not left to idle when not in use.

N-4 The contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.

N-5 The project applicant shall mandate that the construction contractor prohibit the use of music or sound amplification on the project site during construction.

N-6 The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment.

N-7 Limit the use of heavy equipment or vibratory rollers and soil compressors along the project boundaries to the greatest degree possible. It is acknowledged that some soil compression may be necessary along the project boundaries.

N-8 Jackhammers, pneumatic equipment and all other portable stationary noise sources shall be shielded and noise shall be directed away from sensitive receptors.

N-9 For the duration of construction activities, the construction manager shall serve as the contact person should noise levels become disruptive to local residents. A sign should be posted at the project site with the contact phone number.

ADOPTION STATEMENT: This Mitigated Negative Declaration was adopted and above California Environmental Quality Act findings made by the City of San Bernardino Council on:

_____

_____

Oliver Mujica
Planning Department

IPT I-215 DISTRIBUTION CENTER II (GEORGIA)

INITIAL STUDY

Prepared For:

City of San Bernardino
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July 2016

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I. Introduction

Project History

The proposed project site is located in the northern portion of the City of San Bernardino (City), as depicted in **Figure 1**, Regional Location. The project site is located on approximately 8.1 acres on the southwest corner of Saratoga Way and Georgia Boulevard, as depicted in **Figure 2**, Vicinity Map.

Industrial Property Trust (IPT) (owner) and the owner's representative, RDP Development, Inc. (applicant) submitted a pre-application package with project site plans and associated information to the City in January 2016. The applicant and applicant's representatives attended a pre-application review meeting with the City's Development/Economic Review Committee on February 25, 2016.

Current Application

The applicant proposes to develop a 153,010-square-foot (sf) industrial center building on the southwest corner of Saratoga Way and Georgia Boulevard (see *Project Description* below).

In accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] Section 21000 et seq.) and its Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.), this Initial Study has been prepared to evaluate the potential environmental effects associated with the construction and operation of the proposed IPT I-215 Distribution Center II (Georgia) project.

As set forth in the State CEQA Guidelines Section 15070, an Initial Study leading to a Mitigated Negative Declaration (IS/MND) can be prepared when the Initial Study has identified potentially significant environmental impacts, but revisions have been made to the project, prior to public review of the Initial Study, that would avoid or mitigate the impacts to a level considered less than significant; and there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment. This document, together with other technical analysis documents referenced herein, serve as the environmental review of the proposed IPT I-215 Distribution Center II (Georgia) project.

Pursuant to Section 15367 of the State CEQA Guidelines, the City is the Lead Agency charged with the responsibility of deciding whether to approve the proposed project.

With respect to the requirements for an Initial Study, the applicable subsections of the State CEQA Guidelines Section 15063 are:

(A.1) All phases of project planning, implementation, and operation must be considered in the Initial Study of the project.

(A.3) An Initial Study may rely upon expert opinion supported by facts, technical studies or other substantial evidence to document its findings. However, an Initial Study is neither intended nor required to include the level of detail included in an EIR.

(B.2) The Lead Agency shall prepare a Negative Declaration if there is no substantial evidence that the project or any of its aspects may cause a significant effect on the environment.

The purposes of an Initial Study are to:

(C.1) Provide the Lead Agency with information to use as the basis for deciding whether to prepare an EIR or a Negative Declaration.

(C.2) Enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a Negative Declaration.

(C.4) Facilitate environmental assessment early in the design of a project;

(C.5) Provide documentation of the factual basis for the finding in a Negative Declaration that a project will not have a significant effect on the environment;

(C.6) Eliminate unnecessary EIRs;

An Initial Study shall contain in brief form:

(D.1) A description of the project including the location of the project;

(D.2) An identification of the environmental setting;

(D.3) An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries. The brief explanation may be either through a narrative or a reference to another information source such as an attached map, photographs, or an earlier EIR or negative declaration. A reference to another document should include, where appropriate, a citation to the page or pages where the information is found.

(D.4) A discussion of the ways to mitigate the significant effects identified, if any;

(D.5) An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls;

(D.6) The name of the person or persons who prepared or participated in the Initial Study.

(E) If the project is to be carried out by a private person or private organization, the Lead Agency may require such person or organization to submit data and information which will enable the Lead Agency to prepare the Initial Study. Any person may submit any information in any form to assist a Lead Agency in preparing an Initial Study.

(G) As soon as a Lead Agency has determined that an Initial Study will be required for the project, the Lead Agency shall consult informally with all Responsible Agencies and all Trustee Agencies responsible for resources affected by the project to obtain the recommendations of those agencies as to whether an EIR or a Negative Declaration should be prepared. During or immediately after preparation of an Initial Study for a private project, the Lead Agency may consult with the applicant to determine if the applicant is willing to modify the project to reduce or avoid the significant effects identified in the Initial Study.

II. Description of Proposed Project

The proposed IPT I-215 Distribution Center II (Georgia) (proposed project) is a 153,010-sf industrial building with office space, parking, and landscaping on an approximately 8.1-acre property located on the southwest corner of Saratoga Way and Georgia Boulevard in the City of San Bernardino, San Bernardino County, California.

The industrial building would be one level with a maximum height of 47 feet. The building would include 148,010 sf of warehouse space and 5,000 sf of dedicated office space. The building would have 29 dock doors on its southern frontage. Total on-site parking would be 143 stalls, with 86 dedicated to warehouse parking (including office), 51 trailer parking spaces, and 6 dedicated ADA stalls. Landscaping in the amount of 33,619 sf is anticipated for the site. Roadway frontage improvements would be provided along Georgia Boulevard.

Access to the project site would consist of two full-movement driveways on Georgia Boulevard for both trucks and passenger vehicles. Passenger vehicles would enter the site via either of the driveways, depending on which is closest to their parking area destination. Trucks would enter and exit the site via either of the driveways, depending on dock availability and proximity to the closest driveway. Both driveways would be unsignalized.

The industrial building is currently planned as a "spec building." Therefore, the future tenant of the building is not currently known. Furthermore, without knowing the future tenant, an exact number of future employees or hours of operation cannot be determined. Therefore, this Initial Study and associated technical reports use approximate potential on-site employees, hours of operation, and vehicular traffic generation based on the project's proposed square footage and use as an industrial building. In an abundance of caution, this Initial Study and the associated technical reports have assumed uses and intensities which are greater than what might actually be expected at buildout and operation, resulting in a possible overestimation of impacts.

Construction of the proposed project is expected to commence in September 2016 and be completed in May 2017. The project would be operational in 2017.

Existing Project Site

The project site is currently located on parcel 0266-362-20. The project site includes developed and disturbed land uses. The majority of the site consists of land that has been previously graded with dense weedy vegetation. The northern portion of the site consists of a portion of the McLane Distribution Facility. This area is developed and consists of a paved access road, loose gravel, and a perimeter fence. No native habitat exists on the site. There is existing utility access (water, sewer, electricity, gas) to the project site.

Project Site Vicinity

The project site is located in a predominately industrial and commercial area. There are industrial buildings, similar to the proposed industrial building, to the north and south of the site. Vacant lots border the site to the east beyond Georgia Boulevard. There is a mix of single-family residences and commercial properties approximately 330 feet to the southwest of the project site. There is an existing railroad line between the project site and the residences.

General Plan/Zoning/Project Approvals

The City's General Plan land use designation for the site is Industrial. The City's zoning designation for the site is Industrial Light (IL). The proposed project is consistent with the land use designation in the General Plan and the City's Zoning Map for the project site. The required discretionary project approvals consist of a Development Permit. There are no approvals required to be issued by any responsible agency.

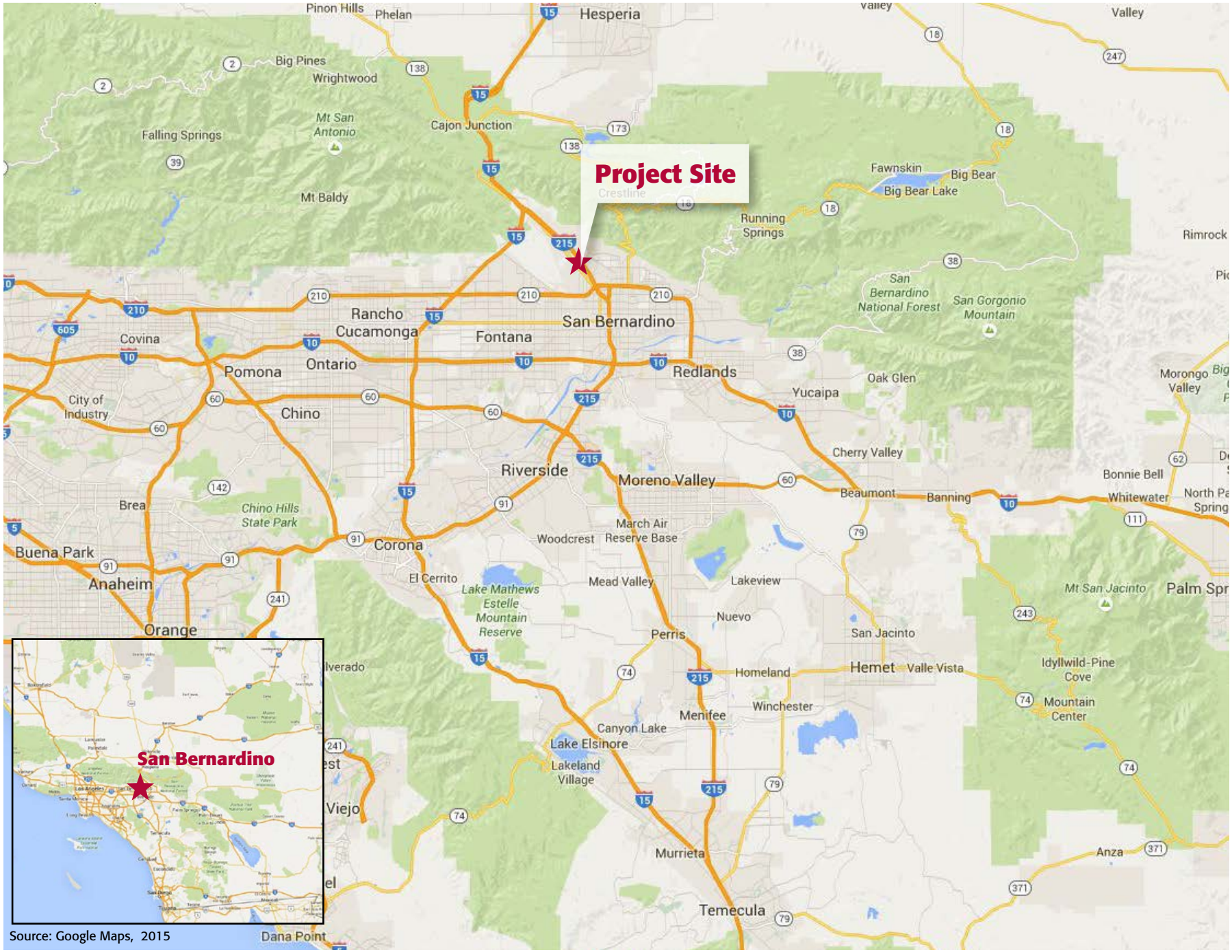

FIGURE 1: Regional Location Map
IPT I-215 Distribution Center II (Georgia) Initial Study
City of San Bernardino

Kimley»Horn

Source: Google Earth, 2015

FIGURE 2: Project Vicinity Map
IPT I-215 Distribution Center II (Georgia) Initial Study
City of San Bernardino

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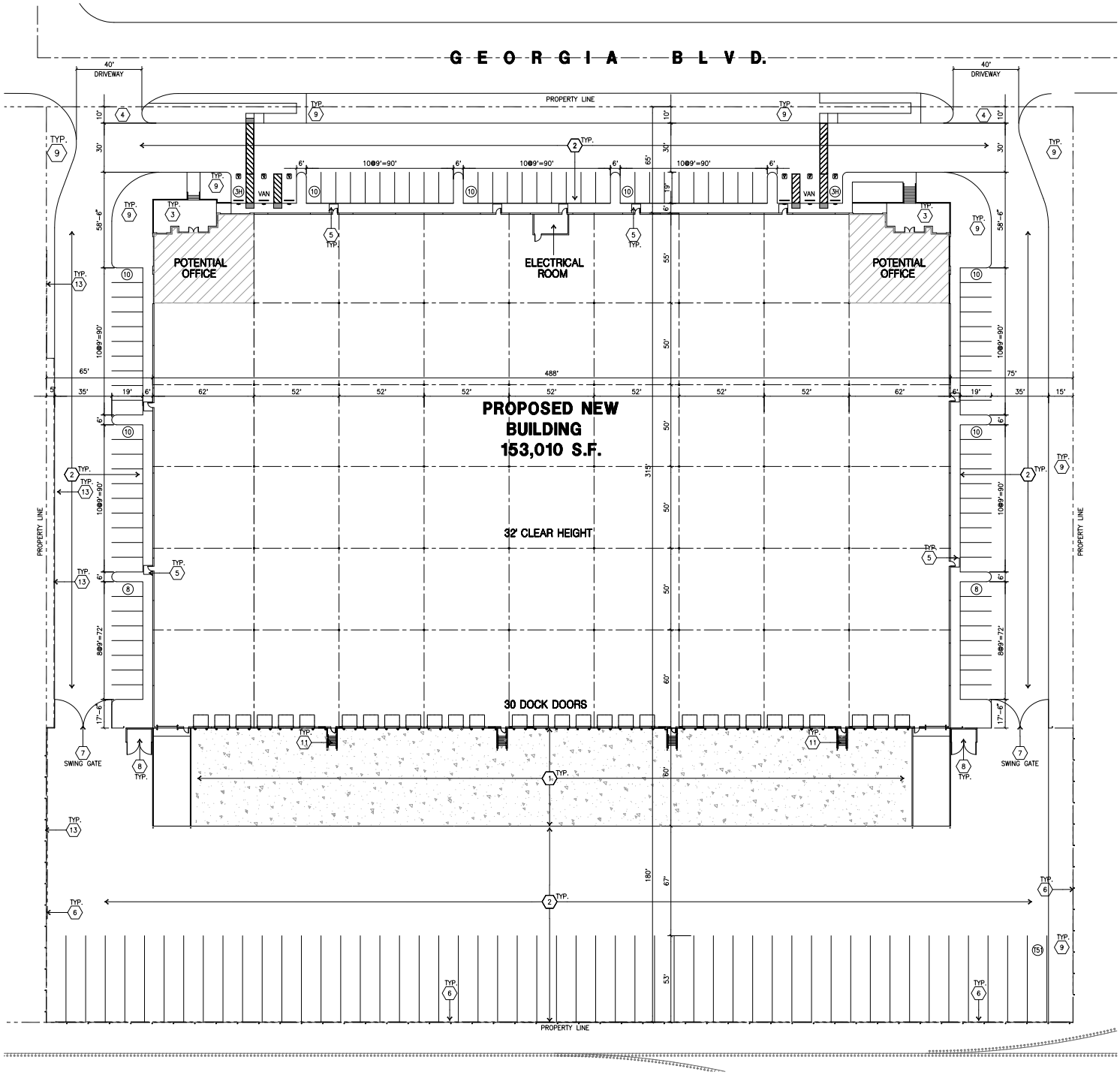

FIGURE 3 - Site Plan
IPT I-215 Distribution Center II (Georgia) Initial Study
City of San Bernardino

Kimley»Horn

III. IPT I-215 Distribution Center II (Georgia) Project Environmental Impact Analysis and Project Approval

The City of San Bernardino (City) is the Lead Agency under CEQA and is responsible for reviewing and approving this Initial Study. As part of the proposed project's implementation, the City will also consider the following approvals:

- Development Permit

Additional permits may be required upon review of construction documents. Other permits required for the project may include, the issuance of encroachment permits for new driveways, sidewalks, and utilities, walls, fences, security and parking area lighting; building permits; and permits for new utility connections. These additional permits are considered ministerial in nature, and thus issuance of these permits would not trigger the need to further comply with CEQA. Development of the project will not require the issuance of any discretionary permits from any other federal, State, or local agency.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agricultural and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

IV. Determination

On the basis of this evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, (b) none of the conditions described in Guidelines Section 15162 for a Subsequent EIR or Section 15163 for a Supplemental EIR have occurred and (c) only minor technical changes or additions to the previous environmental documents are necessary.

July 18, 2016

Signature
Oliver Mujica, Planning Division Manager

Date
For: City of San Bernardino

Environmental Evaluation

This section evaluates the potential environmental effects of the proposed project using the environmental checklist from the State CEQA Guidelines as amended. The definitions of the response column headings include:

A. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant after the implementation of feasible mitigation measures.

B. "Less than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measure has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact."

C. "Less Than Significant Impact" applies where the project creates no significant impacts, only Less than Significant Impacts.

D. "No Impact" applies where the project does not create an impact in that category.

1. Aesthetics

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a State-designated scenic highway?	☐	☐	☐	☒
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Discussion

a) Have a substantial adverse effect on a scenic vista? ***Less Than Significant Impact.***

The proposed project would not have a substantial adverse effect on a scenic vista. The dominant background scenic views from the project site and the surrounding area include the San Gabriel Mountains and the San Bernardino Mountains located approximately 2.5 miles to the east. There are existing and planned industrial uses to the north, south and west of the project site. The project applicant proposes construction of an industrial building that would be a similar height as buildings in the surrounding area and would be consistent with planned development for the area. Several warehouses, similar to the proposed industrial building, are located within the City within a one-mile radius of the site.

Development of the site would convert predominately vacant land to light industrial development. However, this change would not substantially affect the aesthetic nature of the project area because much of the project area is developed land with no distinguishing visual resources or vacant land, which is also zoned for similar uses. Therefore, the change

in views of the project site from the surrounding area would not cause a significant impact on a scenic vista. Impacts are less than significant and no mitigation is required.

b) *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?* ***No Impact.***

The project site and the surrounding area is predominately developed or planned for development and does not have natural landforms or unique features. The project site is located within an urban area with similar industrial uses to the proposed facility. In addition, there are no State or County designated scenic highways in the vicinity of the project site.[1] There are also no historically significant buildings on the site. Therefore, implementation of the proposed project would not block views of any off-site scenic resources and no impacts would occur. No mitigation is required.

c) *Substantially degrade the existing visual character or quality of the site and its surroundings?* ***Less than Significant Impact.***

The proposed project would be located in a predominately industrial and commercial area of the City and would be consistent with the existing and planned surrounding development. Implementation of the proposed project would alter the visual character of the project site; however, it would not negatively impact or substantially degrade the visual quality of the site or its surroundings.

Construction of the proposed project may create temporary aesthetic nuisances associated with construction activities including grading and construction and the presence of construction debris, equipment, and truck traffic. This visual impact associated with the construction of the project would be characteristic of a typical small construction site. These activities would not result in a substantial degradation to the site or surrounding area; no valuable aesthetic resources would be destroyed as a result of construction related-activities. These impacts are temporary in nature and would cease upon construction completion.

For these reasons, the proposed project would have a less than significant impact on the visual character of the site and its surroundings; no mitigation is required.

d) *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?* ***Less Than Significant Impact.***

Existing industrial and commercial uses in the vicinity of the project site have outdoor lighting associated with buildings. The proposed project would include outdoor lighting on the site in the parking and entrance areas of the project site which would result in an increase in the existing level of illumination in the area.

The project's outdoor lighting would be compatible in brightness to the ambient lighting in the surrounding area and would utilize more stringent Backlight, Uplight, and Glare (BUG) rated fixtures whenever possible in order to minimize light pollution and trespass (off-site light spillage). Fixtures with a low BUG rating emit very little light where not needed, thus significantly reducing light pollution. Because of the limited amount of lighting and the

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[1] California Department of Transportation. Official Designated Scenic Highways. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed March 24, 2016.

location of the proposed building in a developed area, lighting associated with the proposed project would not significantly impact the residents in proximity to the proposed project.

Therefore, while the proposed project would increase outdoor lighting on the site and in the area, the increased outdoor lighting would be less than significant. No mitigation is required.

Cumulative Impacts

The potential aesthetic impacts related to views and aesthetics are site specific. As discussed above, project-related impacts would be less than significant. Lighting and sources of glare, while not always site specific, would be consistent with the surrounding urban area and would be utilized during similar hours as surrounding uses. While the proposed project plus cumulative development would change the appearance of the site and surrounding area, all development projects would be expected to be conditioned to follow applicable local planning and design guidelines. Therefore, aesthetic impacts are not expected to be cumulatively considerable and no adverse impacts would occur.

2. Agricultural and Forestry Resources

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion

a) *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?* ***No Impact.***

The project site and surrounding areas are not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the State of California Important Farmland Map, and therefore would not result in a conversion of documented agricultural lands to non-agricultural use. Therefore, no impact would occur as a result of the proposed project; no mitigation is required.

b) *Conflict with existing zoning for agricultural use, or a Williamson Act contract?* ***No Impact.***

The project site is not currently zoned for agricultural use and is not under a Williamson Act contract. Therefore, no impact would occur as a result of the proposed project; no mitigation is required.

c) *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?* ***No Impact.***

The project site is not currently zoned for forest land, timberland, or timberland zoned for production. Therefore, improvements planned as part of the proposed project would not conflict with existing zoning or cause rezoning of any such land. Therefore, no impact would result and no mitigation is required.

d) *Result in the loss of forest land or conversion of forest land to non-forest use*? ***No Impact.***

The project site does not contain forest land. Therefore, no impact would occur in regard to changing forest land to a non-forest use. No mitigation is required.

e) *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use* or conversion of forest land to non-forest use? ***No Impact.***

No designated agricultural or forest land is located within the project site. Therefore, no impact would occur in this regard and no mitigation is required.

Cumulative Impacts

The proposed project would have no impact on agricultural and forestry resources. Therefore, the proposed project would not contribute to a cumulatively considerable impact.

3. Air Quality

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Discussion

An Air Quality Technical Report was prepared by Ldn Consulting (May 2016) to evaluate air quality impacts associated with the proposed project. The report is provided in Appendix A; the results and conclusions of the report are summarized herein.

a) Conflict with or obstruct implementation of the applicable air quality plan? ***Less Than Significant Impact.***

The project is consistent with the 2012 Air Quality Management Plan (AQMP). Therefore, the project would not conflict with or obstruct the implementation of the applicable air quality plan.

The project site is located between Georgia Boulevard and Cajon Boulevard in the South Coast Air Basin (SCAB) within the City of San Bernardino. Climatic conditions within the SCAB area often varies dramatically over short geographical distances due to the size and topography. Most of Southern California is dominated by high-pressure systems for much of the year, which keeps the City mostly sunny and warm. Typically, during the winter months, the high pressure system drops to the south and brings cooler, moister weather from the north. It is common for inversion layers to develop within high-pressure areas, which mostly define pressure patterns over the SCAB. These inversions are caused when a thin layer of the atmosphere increases in temperature with height. An inversion acts like a lid preventing vertical mixing of air through convective overturning.

Daytime temperature highs within the City typically range between 65 degrees Fahrenheit (ºF) in the winter to approximately 95º F in the summer with the month of August usually being the hottest month. Median temperatures range from approximately 52º F in the winter to approximately 79º F in the summer. The average humidity is approximately 62 percent in the winter and about 68 percent in the summer. The City usually receives approximately 14.4 inches of rain per year with February usually being the wettest month of the year (City-Data, 2016).

California has 35 specific air districts, which are each responsible for ensuring that the criteria pollutants are below the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). Air basins that exceed either the NAAQS or the CAAQS for any criteria pollutants for set periods are designated as "non-attainment areas" for that pollutant. Currently, there are 15 non-attainment areas for the federal ozone standard and two non-attainment areas for the PM2.5 standard. California has therefore created the California State Implementation Plan (SIP), which is designed to provide control measures needed for California air basins to attain ambient air quality standards.

The South Coast Air Quality Management District (SCAQMD) is the agency principally responsible for comprehensive air pollution control in the SCAB, which includes all of Orange County and the urbanized portions of Los Angeles, Riverside, and San Bernardino Counties. The SCAQMD develops rules and regulations; establishes permitting requirements for stationary sources; inspects emissions sources; and enforces such measures through educational programs or fines, when necessary. A complete listing of the current attainment status by pollutants for the SCAB is shown on **Table 1** on the following page.

Air quality plans describe air pollution control strategies and measures to be implemented by a city, county, region, and/or air district. The primary purpose of an air quality plan is to bring an area that does not attain federal and State air quality standards into compliance with the requirements of the federal Clean Air Act and California Clean Air Act. In addition, air quality plans are developed to ensure that an area maintains a healthful level of air quality based on the NAAQS and the CAAQS. The Air Quality Management Plan (AQMP) is prepared by SCAQMD and the Southern California Association of Governments (SCAG). The AQMP provides policies and control measures that reduce emissions to attain both State and federal ambient air quality standards for the SCAB.

The SCAQMD's California Environmental Quality Act (CEQA) Handbook, as updated in 2015, identifies two key indicators of consistency with the AQMP:

1. Whether a project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
2. Whether a project will exceed the assumptions in the AQMP based on the year of project buildout and phase.

Table 1: South Coast Air Basin Attainment Status by Pollutant

South Coast Air Basin Attainment Status by Pollutant			
Pollutant	**Average Time**	**California Standards**	**Federal Standards**
Ozone (O_3)	1 Hour	Non-attainment	No Federal Standard
	8 Hour		Extreme Non-attainment
Respirable Particulate Matter (PM10)	Annual Arithmetic Mean	Non-attainment	No Federal Standard
	24 Hour	Non-attainment	Attainment
	Annual Arithmetic Mean	Non-attainment	No Federal Standard[2]
Fine Particulate Matter PM2.5	24 Hour	No State Standard	Non-attainment
	Annual Arithmetic Mean	Non-attainment	Non-attainment
Carbon Monoxide (CO)	8 hour	Attainment	Maintenance Area[3]
	1 hour		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	Non-attainment	Maintenance Area[3]
	1 Hour	Non-attainment	Attainment
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	No State Standard	Attainment
	24 Hour	Attainment	Attainment
	1 Hour	Attainment	No Federal Standard
Lead	30 Day Average	Attainment	No Federal Standard
	Calendar Quarter	No State Standard	Attainment
Visibility Reducing Particles	8 Hour (10AM to 6PM, PST)	Unclassified	No Federal Standard
Sulfates	24 Hour	Attainment	No Federal Standard
Hydrogen Sulfide	1 Hour	Unclassified	No Federal Standard

Notes:
1. Data reflects status as the year 2009.
2. The federal annual standards were removed by EPA in December 2006.
3. Maintenance Area (defined by U.S. Department of Transportation) is any geographic region of the United States previously designated nonattainment pursuant to the CAA Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under section 175A of the CAA, as amended.

To determine whether a project would create potential air quality impacts, the City uses SQAQMD Air Quality Thresholds. The screening thresholds for construction and daily operations are shown in Table 2 on the following page.

The U.S. Environmental Protection Agency (U.S. EPA) uses the term Volatile Organic Compounds (VOC) and the California Air Resources Board's (CARB's) Emission Inventory Branch (EIB) uses the term Reactive Organic Gases (ROG) to essentially define the same thing. There are minor deviations between compounds that define each term however for purposes of this study we will assume they are essentially the same due to the fact SCAQMD interchanges these words and because CALLEEMOD 2013.2.2 directly calculates ROG in place of VOC.

Table 2: Screening Threshold for Criteria Pollutants

Pollutant	Total Emissions (Pounds per Day)
Construction Emissions	
Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)	150 and 55
Nitrogen Oxide (NO_x)	100
Sulfur Oxide (SO_x)	150
Carbon Monoxide (CO)	550
Volatile Organic Compounds (VOCs)	75
Operational Emissions	
Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)	150 and 55
Nitrogen Oxide (NO_x)	55
Sulfur Oxide (SO_x)	150
Carbon Monoxide (CO)	550
Lead and Lead Compounds	3.2
Volatile Organic Compounds (VOCs)	55

Criteria pollutants are measured continuously throughout the SCAB. This data is used to track ambient air quality patterns throughout the County. As mentioned earlier, this data is also used to determine attainment status when compared to the NAAQS and CAAQS.

Ambient Data was obtained from the California Environmental Protection Agency's Air Resources Board Website (California Air Resources Board, 2015). Table 3 below identifies the closest criteria pollutants monitored to the project as well as identifies the relative distance to the project site. The proposed development project is closest to the monitoring stations located at San Bernardino 4th Street station.

Table 3: Three-Year Ambient Air Quality Summary near the Project Site

Pollutant	Closest Recorded Ambient Monitoring Site	Averaging Time	CAAQS	NAAQS	2013	2014	2015
O_3 (ppm)	San Bernardino – 4th Street	1 Hour	0.09 ppm	-	0.139	0.121	0.134
		8 Hour	0.070 ppm	0.075 ppm	0.112	0.099	0.117
PM_{10} (µg/m3)		24 Hour	50 µg/m3	150 µg/m3	87.1	305.8	-
		Annual Arithmetic Mean	20 µg/m3	-	24.8	27.7	-
$PM_{2.5}$ (µg/m3)		24 Hour	-	35 µg/m3	55.3	73.9	53.5
NO_2 (ppm)		Annual Arithmetic Mean	0.030 ppm	0.053 ppm	-	0.018	0.015
		1 Hour	0.18 ppm	-	0.0721	0.0726	0.0714

Construction Phase

Emissions from the construction phase of the proposed project were estimated based on an estimated construction kickoff starting early 2017. Construction of the entire project would take approximately 12 months.

Air quality impacts related to construction and daily operations were calculated using the latest CalEEMod air quality model, which was developed by ENVIRON International Corporation for SCAQMD in 2013.

As a design feature of this project, only Tier IV diesel equipment will be utilized and would be a required condition of this project. A summary of the construction emissions is shown in Table 4 below.

Table 4: Expected Construction Emissions Summary

Year	ROG	NO_x	CO	SO_2	PM_{10} (Dust)	PM_{10} (Exhaust)	PM_{10} (Total)	$PM_{2.5}$ (Dust)	$PM_{2.5}$ (Exhaust)	$PM_{2.5}$ (Total)
2017 (lb/day) Unmitigated	11.08	51.83	40.31	0.04	18.72	2.76	21.47	10.03	2.54	12.57
SQAQMD Significance Threshold (lb/day)	75	100	550	150	-	-	150	-	-	55
Exceeds SCAQMD Screening Threshold	**No**	**No**	**No**	**No**	**-**	**-**	**No**	**-**	**-**	**No**

Based on these findings, construction emissions would not exceed SCAQMD air quality standards. Therefore, construction mitigation would not be required to meet SCAQMD standards and the project would be compatible with CEQA.

Localized Significance Thresholds (LST) for Construction

SCAQMD also recommend using LST methodology which incorporates background ambient air quality data. Ldn consulting utilized the ISCST3 dispersion model for these calculations to determine project-level emissions for NOx, CO, and PM10. Emissions were calculated using multiple point sources over the project site. Total construction emissions were used as taken from CalEEMod. Tier IV equipment was assumed as this equipment would be implemented as a design feature to this project.

Based upon the CalEEMod air quality modeling, the project would not contribute emissions in significant quantities to exceed the LSTs and would not require any additional mitigation. Therefore, local air quality impacts from construction of the proposed project would be less than significant.

Health Risk from Construction

Based upon the air quality modeling, worst-case on-site PM10 from construction Tier IV exhaust would cumulatively produce 0.00188 tons over the construction duration or an average of 0.00023 grams/second. Utilizing the AERMOD dispersion model, the resulting inhalation cancer risk is 8.49 at the nearest residential receptor. At this distance, the cancer risk would not exceed 10 in one million; therefore the impact would be less than significant.

Operational Phase

The ongoing operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the project-generated vehicle trips and through operational emissions from ongoing uses. Operations-related air quality impacts were analyzed using CalEEMod 2013.2.2 utilizing emissions from EMFAC2011. Mobile sources include emissions from vehicles; vehicle trips were based on the traffic study prepared by Kimley-Horn (April 2016) for the proposed project.

The daily operational pollutants were calculated for both summer and winter scenarios. Table 5 and 6 below identify the proposed project's long-term operations. None of the criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

Table 5: Operational Unmitigated - Summer Daily Pollutant Generation

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area Source Emission Estimates (Lb/Day)	4.00	0.00	0.02	0.00	0.00	0.00
Energy Emission Estimates (Lb/Day)	0.01	0.09	0.07	0.00	0.01	0.01
Mobile Emission Estimates (Lb/Day)	2.21	12.71	29.52	0.09	5.23	1.54
Total (Lb/Day)	**6.22**	**12.80**	**29.61**	**0.09**	**5.24**	**1.55**
SCAQMD Thresholds	55	55	550	150	150	55
Significant?	No	No	No	No	No	No
Note: Daily pollutant generation assumes trip distances within CalEEMod						

Table 6: Operational Unmitigated - Winter Daily Pollutant Generation

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area Source Emission Estimates (Lb/Day)	4.00	0.00	0.02	0.00	0.00	0.00
Energy Emission Estimates (Lb/Day)	0.01	0.09	0.07	0.00	0.01	0.01
Mobile Emission Estimates (Lb/Day)	2.17	13.21	28.24	0.08	5.23	1.54
Total (Lb/Day)	**6.18**	**13.30**	**28.33**	**0.08**	**5.24**	**1.55**
SCAQMD Thresholds	55	55	550	150	150	55
Significant?	No	No	No	No	No	No
Note: Daily pollutant generation assumes trip distances within CalEEMod						

The Project would be consistent with the AQMP two key indicators as follows:

1) Criterion 1 - Increase in the Frequency or Severity of Violations

Based on the air quality modeling analysis contained in the Air Quality Technical Report, short-term construction impacts would not result in significant impacts based on the SCAQMD regional and local thresholds of significance. Additionally, long-term operations impacts would not result in significant impacts based on the SCAQMD local, regional, and toxic air contaminant thresholds of significance. Therefore, the proposed project is not anticipated to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

2) Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The SCAG Regional Comprehensive Plan and Guide (RCP&G) consists of three sections: Core Chapters, Ancillary Chapters, and Bridge Chapters. The Growth Management, Regional Mobility, Air Quality, Water Quality, and Hazardous Waste Management chapters constitute the Core Chapters of the document. These chapters currently respond directly to federal and State requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For this project, the City General Plan defines the assumptions that are represented in the AQMP.

The City's General Plan land use designation for the project site is Industrial. The City's zoning designation for the site is Industrial Light. Therefore, the proposed project is consistent with the land use and zoning designations. Furthermore, buildout of the project site was anticipated in the City's General Plan and General Plan EIR, and thus, the project is consistent with the assumptions of the AQMP. Based on the above, the proposed project would not conflict with implementation of the AQMP, impacts are considered to be less than significant.

b) *Violate any air quality standard or contribute substantially to an existing or projected air quality violation?* ***Less Than Significant Impact.***

As described above, the Air Quality Technical Report determined that emissions associated with the construction and operations of the facility would be below the significance thresholds for all pollutants. Therefore, implementation of the proposed project would not violate an air quality standard or contribute to an existing or projected air quality violation. No mitigation is required.

c) *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?* ***Less Than Significant Impact.***

The project area is in nonattainment for ozone and PM10 particulate matter. For nonattainment pollutants, if emissions exceed the significance thresholds shown in Table 1 and 2 above, the project could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on ambient air quality. As shown in Tables 1 and 2, emissions are below the significance thresholds for all pollutants. Therefore, cumulative impacts from construction and operational emissions would be less than significant and no mitigation is required.

d) *Expose sensitive receptors to substantial pollutant concentrations?* ***Less Than Significant Impact.***

The State CEQA Guidelines indicate that a potentially significant impact could occur if the proposed project would expose sensitive receptors to substantial pollutant concentrations. As discussed in question 3 a) above, and shown in Tables 3 and 5, the project's emissions with not exceed SCAQMD Localized Significance Thresholds at the closest receptor locations during construction or operation and impacts would be less than significant.

In addition, Ldn Consulting prepared an Air Quality Health Risk Screening Analysis (HRA) to identify potential health risks at the project site from toxic air contaminants (specifically diesel particulates) from the on-site loading area. Health risks from diesel particulate matter are two-fold. First, diesel particulate matter is a carcinogen according to the State of California. Second, long-term chronic exposure to diesel particulate matter can cause health effects to the respiratory system.

The HRA used the California Office of Environmental Health Hazard Assessment (OEHHA) methodologies (Office of Environmental Health Hazard Assessment, 2015) as outlined by the California Air Pollution Control Officers Association (CAPCOA, July 2009). Health risk impacts are generally broken up into two types: projects which have the potential to emit toxic emissions and have the potential to impact nearby receptors; and projects which add receptors in the vicinity of existing toxic sources like freeways, high traffic roads or rail yards. Based on this information, the air quality analysis focused on nearby residential receptors which may be exposed by the warehouse facility.

Significance thresholds have been generally established under SCAQMDs control strategies for reducing cumulative impacts from air pollution (SCAQMD, 2003). One source of emissions contributing to a cumulative impact is ground support operations associated with cargo sorting and transport within ports, rail yards, and distribution centers. From SCAQMD Rule 1401, a project shall not be approved if the cancer risk is increased to greater that 10 in one million assuming control technology (TBACT) is used (SCAQMD, 2015).

Cancer risk calculations are based on a 70 year lifetime exposure. In some limited cases, it may be appropriate to also use between 9 to 40 years exposure in the calculation. The 9 year exposure scenario is based on exposure to children during the first 9 years of life. Some districts use the 9 year exposure scenario to model short-term projects. (CAPCOA, July 2009). For purposes of the HRA, it is reasonable to assume a 30 or 70 year duration. For purposes of modeling, the AERMOD model was utilized to predict offsite diesel particulate concentrations at nearby residential receptors.

The nearest sensitive receptors that may be impacted by the proposed project are the residential dwelling units to the southwest of the project site beyond the railroad. The cancer risk at the nearest receptor location (nearest residence) does not exceed a 30-year cancer risk of 2.23 per million people or a 70-year cancer risk of 3.90 per million people. All off-site diesel emissions concentrations would be below the 10.0 in a million cancer risk

threshold. Therefore, no significant long-term health impacts would occur to adjacent receptors from the operation of diesel trucks on the project site.

e) Create objectionable odors affecting a substantial number of people? ***No Impact.***

Potential sources from the proposed project that may emit odors during construction activities include the application of materials such as asphalt pavement. The objectionable odors that may be produced during the construction process are short term and are expected cease upon the drying or hardening of the odor producing materials.

Potential odor sources from ongoing operations would include odor emissions from diesel truck emissions and trash storage areas. Due to the distance of the nearest receptors from the project site, no significant impact related to odors would occur during the ongoing operations of the proposed project.

Odor impacts from construction operations would be considered short term events and would not be considered an impact. Long term operations would not create offensive odors and would not create any operational odor impacts. No significant impacts would occur and no mitigation is required.

Cumulative Impacts

In the event direct impacts on air quality from a project are less than significant, a project may still have a cumulatively considerable impact on air quality if the emissions from the project, in combination with the emissions from other proposed, or reasonably foreseeable future projects are in excess of screening levels identified above, and the project's contribution accounts for more than an insignificant proportion of the cumulative total emissions. According to the TIS, there are no cumulative projects identified within 500 meters of the project site (Kimley-Horn, 2016), which is the extent to which the proposed project was modeled for air quality emissions. Since project emissions drop off to almost zero beyond this distance, cumulative impacts from the proposed project would not be expected.

4. Biological Resources

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☒

Discussion

a) *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the USFWS?* ***No Impact.***

Kimley-Horn conducted a reconnaissance of the project site on April 27, 2016. The project site includes developed and disturbed land uses. The majority of the site consists of land that has been previously graded with dense weedy vegetation. The northern portion of the site consists of a portion of the McLane Distribution Facility. This area is developed and consists of a paved access road, loose gravel, a few landscaped/ornamental trees and a perimeter fence. No native habitat exists on the site.

The project site was evaluated for the potential for burrowing owl (BUOW; *Athene cunicularia*) to occur on the site. Suitable BUOW habitat in California is generally typified by short, sparse vegetation with few shrubs, level to gently sloping topography and well-drained soils (Haug et al. 1993). Grassland, shrub steppe, and desert are naturally occurring habitat types used by BUOW. In addition, BUOW may occur in some agricultural areas, ruderal fields, vacant lots, and pastures if the vegetation structure is suitable and there are usable burrows and foraging habitat in the proximity (Gervais et al. 2008). Suitable burrows are usually dug by other species; these are termed host burrowers. In California, California ground squirrel (*Spermophilus beecheyi*) and round-tailed ground squirrel (*Citellus tereticaudus*) burrows are frequently used by BUOW but they may also use dens or holes dug by other fossorial species including badger (*Taxidea taxus*), coyote (*Canis latrans*), and fox (e.g., San Joaquin kit fox [*Vulpes macrotis mutica*], Ronan 2002). Natural rock cavities, debris piles, culverts, and pipes also are used by BUOW for nesting and roosting (Rosenberg et al. 1998). BUOW have also been documented using artificial burrows for nesting and cover (Smith and Belthoff 2003).

There was no ground squirrel activity or burrows observed within the project site.

The proposed project would not have an effect, either directly or through habitat modifications, on any species identified as a candidate, as a sensitive, or as a special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS). The project site has been previously graded and does not contain suitable habitat for any protected species. Therefore, there would be no impact to sensitive species. No mitigation is required.

b) *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service?* ***No Impact.***

The project site is relatively flat and has previously been disturbed by human activities. There are no native habitats on site. Additionally, no drainages, riparian habitat, or aquatic features were observed during the site visit. No impacts to riparian habitat or other sensitive natural community would occur as a result of the proposed project; no mitigation is required.

c) *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?* ***No Impact.***

As discussed above in threshold 4.b, the project site does not contain potential jurisdictional features, including federally protected wetlands and other features that carry water. Therefore, no impacts would occur and no mitigation is required.

d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?* ***Less Than Significant Impact with Mitigation Incorporated.***

Wildlife Corridors: The project site is not located within a known migratory wildlife corridor nor serves as wildlife nursery site. Construction of the proposed project would not impact a wildlife corridor. Therefore, there would be no impact to migratory wildlife or corridors and no mitigation is required.

Nesting Birds: Nesting birds and their nests are protected under the provisions of the Migratory Bird Treaty Act (MBTA) and CDFW codes. As discussed above in threshold 4.a suitable habitat for birds protected by the MBTA occurs on the project site. The intentional loss of any active bird nests during project construction would be considered a significant impact. Implementation of Mitigation Measures B-1a and B-1b would reduce potential impacts to nesting birds to a less than significant level.

Mitigation Measures

B-1a Trees and other suitable nesting habitat within the limits of work shall be surveyed by a qualified biologist prior to initiating ground disturbing activities. A pre-construction survey would be conducted no more than 72 hours prior to the start of work. If no active nests are observed, construction activities should be initiated within 72 hours. If more than 72 hours pass and construction has not been initiated, another survey would be required.

B-1b If, during the breeding season (typically March through August), an active nest is discovered in a tree or shrub to be removed, the tree or shrub shall be protected using orange construction fence or the equivalent. The protective fencing shall be placed around the tree or shrub at the following distance depending on species and as determined by a qualified biologist: 25 feet from the drip line of the tree or shrub for passerines and non-raptors; 300 feet from the drip line of the tree for raptors. No parking, storage of materials, or work would be allowed within this area until the end of the breeding season or until the young have fledged, as determined by a qualified biologist.

e) Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy/ordinance? ***Less Than Significant Impact.***

The City of San Bernardino Municipal Code Section 19.28.100 requires a tree removal permit from the City where more than 5 trees will be cut down, uprooted, destroyed, or removed within a 36-month period. Section 19.28.100 mandates the replacement of removed trees on a 1:1 basis. There were fewer than 5 trees observed on site during the site visit on April 27, 2016. Impacts to trees due to the proposed project would be less than significant and no mitigation is required.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan? ***No Impact.***

The project site is located in an urban environment and is not included in an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. No impact relative to adopted habitat conservation or other approved local, regional or State plans would occur.

Cumulative Impacts

The proposed project would not cause a significant impact to biological resources. Therefore, the proposed project would not contribute to a cumulatively considerable impact.

5. Cultural Resources

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☒	☐	☐
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

Discussion

a) *Cause a substantial adverse change in the significance of a historical resource?* ***Less Than Significant Impact with Mitigation Incorporated.***

A Cultural Resource Study Findings Memo was prepared by ASM Affiliates in April 2016 for the proposed project. The study included a records search at the South Central Coastal Information Center (SCCIC), a search of the Sacred Lands Files of the California Native American Heritage Commission (NAHC), and a pedestrian survey of accessible portions of the project site. The memo is included as Appendix B and the findings are summarized below. Additionally, the City is complying with AB 52 (Tribal Cultural Resources and Consultation) by notifying the affected Native American tribes.

Only two cultural resources have been previously recorded within a one-mile radius of the project site. Both resources are historic: a manufacturing facility and a transmission line. No resources have been previously documented within the proposed project area.

The project site is located within a highly disturbed urbanized area and does not contain significant historic or archaeological resources. However, there is a possibility of currently undetectable historic subsurface deposits being present within the project site due to the area's early residential development. Implementation of Mitigation Measure CR-1 would reduce potential impacts to a less than significant level.

Mitigation Measure

CR-1 Prior to beginning project construction, the Project applicant shall retain an archaeological monitor to monitor initial ground-disturbing activities in an effort to identify any unknown archaeological resources. Any newly discovered cultural resource deposits shall be subject to a cultural resources evaluation.

b) *Cause a substantial adverse change in the significance of an archaeological resource? Less* ***Than Significant Impact with Mitigation Incorporated.***

As discussed above, implementation of Mitigation Measure CR-1 would reduce potential impacts to archaeological resources from the proposed project to a less than significant level.

c) *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?* ***No Impact.***

The project site is not located within an area identified by the City for paleontological sensitivity and there are no known paleontological resources located on the project site. The City's General Plan contains goals and policies that specifically address sensitive paleontological resources and their protection if they are encountered during any development activity. In the event that unknown paleontological resources are unearthed during construction activities on the project site, standard City conditions requiring the stoppage of work and identification of potential resources would apply. Therefore, the proposed project would not cause a substantial adverse change in the significance of a paleontological resource and no mitigation is required.

d) *Disturb any human remains, including those interred outside of formal cemeteries?* ***No Impact.***

No known human remains are located within the project site. In the event that unknown human remains are unearthed during construction activities on the project site, standard City conditions requiring the stoppage of work and identification of human remains would apply and no mitigation is required.

Cumulative Impacts

The proposed project would result in no impacts to historical, known archaeological or paleontological resources, or known human remains. The chances of cumulative impacts occurring as a result of project implementation plus implementation of other projects in the region is not likely since all proposed projects would be subject to individual project-level environmental review. Since there would be no project-related impacts and due to existing laws and regulations in place to protect cultural resources and prevent significant impact to paleontological resources, the potential incremental effects of the proposed project would not be cumulatively considerable.

6. Geology and Soils

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☐	☒
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☒	☐	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Discussion

a) *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*

1) *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.* ***Less Than Significant Impact.***

A Geotechnical Engineering Investigation was prepared for the project in November 2015 by Southern California Geotechnical. The report is provided in Appendix C and is summarized in this Initial Study section.

The Alquist-Priolo Earthquake Fault Zoning Act (Act) was passed in 1972 to address the hazard of surface faulting to structures for human occupancy. The Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act requires the State Geologist to establish regulatory zones, known as "Alquist-Priolo (AP) Earthquake Fault Zones" around the surface traces of active faults and to issue appropriate maps. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault (typically 50 feet). According to the Geotechnical Engineering Investigation, the project site is not located within an AP Earthquake Fault Zone. According to the report, there are no known active or potentially active faults trending towards or through the site and the potential for damage due to direct fault rupture is considered to be low. The possibility of significant fault rupture on the project site is considered to be less than significant and no mitigation is required.

2) *Strong seismic ground shaking?* ***Less Than Significant Impact.***

The site is located in an area of high regional seismicity and the San Jacinto (San Bernardino) fault is located less than 2.25 miles from the site. Ground shaking originating from earthquakes along other active faults in the region is expected to induce lower horizontal accelerations due to smaller anticipated earthquakes and/or greater distances to other faults. The proposed project would be required to be in conformance with the California Building Code (CBC), City regulations, and other applicable standards. Conformance with standard engineering practices and design criteria would reduce the effects of seismic ground shaking to a less than significant level. No mitigation is required.

3) *Seismic-related ground failure, including liquefaction?* ***Less than Significant Impact.***

Liquefaction generally occurs as a "quicksand" type of ground failure caused by strong ground shaking. The primary factors influencing liquefaction potential include groundwater, soil type, relative density of the sandy soils, confining pressure, and the intensity and duration of ground shaking. The project site is not located within an area of liquefaction susceptibility. Additionally, the subsurface conditions encountered at the borings drilled at the site are not considered to be conducive to liquefaction. These conditions generally consist of medium dense to very dense, well graded, granular soils, and no evidence of a static water table within the upper 30 feet. Based on the mapping performed by the County of San Bernardino and the subsurface conditions encountered at the boring locations, the potential impact from ground-related failure, including liquefaction, is considered to be less than significant. No mitigation is required.

4) *Landslides?* ***No Impact.***

Landslides are mass movements of the ground that include rock falls, relatively shallow slumping and sliding of soil, and deeper rotational or transitional movement of soil or rock. The project site is relatively flat and is not located within an area susceptible to landslides. Therefore, there would be no impact from landslides on the proposed project and no mitigation is required.

b) Result in substantial soil erosion or the loss of topsoil? ***Less Than Significant Impact.***

Trenching during the construction phase of the project would displace soils and temporarily increase the potential for soils to be subject to wind and water erosion. However, erosion and loss of topsoil can be controlled using standard construction practices. With adherence

to the applicable practices and regulations, impacts would be considered less than significant and no mitigation is required.

c) *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?* ***Less Than Significant Impact with Mitigation Incorporated.***

As discussed above in threshold 6.a.3, the project site is in an area with low liquefaction potential. The project site is also not in an area subject to landslides. According to the Geotechnical Engineering Investigation, the site consists of fill and natural soil. Fill was encountered in some areas to a depth of 12 to 14.5 feet. The report includes recommendations to ensure that soils are appropriate for development. Implementation of Mitigation Measure G-1 would reduce potential impacts to a less than significant level.

Mitigation Measure

G-1 All grading and construction of the project site shall comply with the geotechnical recommendations contained in the Geotechnical Engineering Investigation prepared by Southern California Geotechnical dated November 2015. All recommendations contained in the report shall be incorporated into all final and engineering and grading plans subject to the review and approval of the City of San Bernardino Community Development Department.

d) *Be located on expansive soil, as defined in Table 18-1-B of the California Building Code (2013), creating substantial risks to life or property?* ***Less Than Significant Impact.***

The proposed project would be required to be in conformance with the California Building Code, City regulations, and other applicable standards. Conformance with standard engineering practices, design criteria, and Mitigation Measure G-1 would reduce impacts related to expansive soil potential to a less than significant level.

e) *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?* ***No Impact.***

The proposed project would not include the implementation of septic tanks or alternative wastewater disposal systems. Therefore, no impact would occur and no mitigation is required.

Cumulative Impacts

The potential cumulative impact related to earth and geology is typically site specific. The analysis herein determined that the proposed project would not result in any significant impacts related to landform modification, grading, or the destruction of a geologically significant landform or feature with implementation of mitigation. Moreover, existing State and local laws and regulations are in place to protect people and property from substantial adverse geological and soils effects, including fault rupture, strong seismic ground shaking, seismic-induced ground failure (including liquefaction), and landslides. Existing laws and regulations also protect people and property from adverse effects related to soil erosion, expansive soils, loss of topsoil, development on an unstable geologic unit or soil type that could result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse. These existing laws and regulations, along with mitigation assigned to the proposed project, would render potentially

adverse geological and soil effects of the proposed project to a level considered less than significant. Moreover, these existing laws and regulations also ensure that past, present, and reasonably foreseeable future projects in the San Bernardino region do not result in substantial adverse geological and soils effects. As a result, the existing legal and regulatory framework would ensure that the incremental geological and soils effects of the proposed project would not result in greater adverse cumulative effects when considered together with the effects of other past, present, and reasonably foreseeable future projects in the San Bernardino region. The impacts of the proposed project-related to geology and soils would be less than cumulatively considerable.

7. Greenhouse Gas Emissions

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion

a) *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?* ***Less than Significant Impact.***

A Global Climate Change Technical Report which addresses greenhouse gas (GHG) emissions was prepared by Ldn Consulting (May 2016). The results and conclusions of the report are summarized herein (Appendix D).

The City of San Bernardino has decided to participate in San Bernardino Associated Governments (SANBAG) San Bernardino County Regional GHG Reduction Plan. As part of that plan, 21 cities participated with the goal of determining GHG inventories, emission targets and reduction strategies all of which will serve as foundations for the development of individual City specific Climate Action Plans (CAP) (SANBAG, 2015). Based on that plan, the City has selected a 15% reduction strategy below its 2008 levels by 2020.

As part of SANBAG's GHG Reduction plan, no specific screening thresholds were identified. The City of San Bernardino does not have specific numerical GHG thresholds; however, since the City is within SCAQMD, it is appropriate to utilize the latest SCAQMD draft guidance for GHG impacts. Currently, SCAQMD industry standards within the district has followed Tier screening standards as the baseline for significance thresholds since September 2010. Under this methodology, screening values are established for industrial, residential and combined project types which are 10,000 metric tons (MT)/year CO2e for certain industrial projects, 3,500 MT/year CO2e for residential projects and 3,000 MT/year CO2e for mixed use projects. Regardless of whether the industrial or mixed use project is used, as discussed below, the proposed project does not exceed either threshold. If the project exceeds these thresholds, the project would be required to implement mitigation measures to reduce GHG impacts by 15% below the City's 2008 levels by 2020.

GHG impacts related to construction was calculated using the latest CalEEMod 2013.2.2 air quality model which was developed by ENVIRON International Corporation for SCAQMD. Additionally, CO2e emissions generated from blasting was added to the CalEEMod output. CalEEMod incorporates emission factors from the EMFAC2011 model for on-road vehicle emissions and the OFFROAD2011 model for off-road vehicle emissions. Because CO2 emissions from construction only occur at the beginning of a project, emissions were averaged over a 30-year period. This recommendation was based on proposals from South Coast Air Quality Management District in 2008.

Once construction is completed the proposed project would generate air quality and GHG emissions from daily operations which would include sources such as Area, Energy, Mobile, Solid waste and Water uses, which are calculated within CalEEMod. Area Sources include usage of fireplaces, consumer products, landscaping and architectural coatings as part of regular maintenance. For this project however, very few emissions are expected from consumer sources since nobody will be living onsite. Energy sources would be from uses such as electricity and natural gas. Solid waste generated in the form of trash is also considered as decomposition of organic material breaks down to form GHGs. GHGs from water are also indirectly generated through the conveyance of the resource via pumping throughout the state and as necessary for wastewater treatment. Finally the project would also generate air quality emissions and GHG through the use of carbon fuel burning vehicles for transportation. The project was sourced out as an unrefrigerated warehouse. Also, the CalEEMod input file was adjusted using an 80.3% passenger vehicle, 19.7% heavy truck scenario which is consistent with the project traffic study (Kimley Horn, 2016).

Project Related Construction Emissions

Based on the construction equipment assumptions for the project, the construction of the proposed project will produce 464.38 MT of CO2e over the construction life of the project. Given the fact that the total emissions will ultimately contribute to yearly emission levels, it is acceptable to average the total construction emission over a 30 year period, which would be 15.48 MT of CO2e per year. A summary of the construction emissions is shown in Table 7 below.

Table 7: Expected Annual Construction CO_2e Emissions Summary MT/Year

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
2017	464.38	464.38	464.38	464.38	464.38	464.38
Total						**464.38**
Yearly Average Construction Emissions (Metric Tons/year over 30 years)						**15.48**
Note: Expected Construction emissions are based upon CalEEMod modeling assumptions for equipment and durations listed in Table 4.1 above.						

Project Related Operational Emissions/Conclusions

As previously discussed, emissions generated from Area, Energy, Mobile, Solid Waste and Water uses is also calculated within CalEEMod. The program is largely based on default settings which are automatically populated throughout the model based on the imputed land use. Statewide averages for utility emissions were utilized for the calculations throughout the model. The calculated operational emissions are identified in Table 8 below.

Table 8: Expected Operational Emissions Summary MT/Year

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Area	0.000	0.004	0.004	0.000	0.000	0.004
Energy	0.000	149.708	149.708	0.006	0.002	150.332
Mobile	0.000	1,173.625	1,173.625	0.033	0.000	1,174.319
Waste	28.772	0.000	28.772	1.700	0.000	64.480
Water	11.063	129.933	140.995	1.142	0.028	173.682
Amortized Construction Emissions (Table 5.1 above)						15.48
Total Construction and Operations						**1,578.30**
Note: Expected Construction emissions are based upon CalEEMod modeling assumptions for equipment and durations listed in Table 1 above. Data is presented in decimal format and may have rounding errors.						

Based upon the findings for the proposed project, the combined construction and operational activities of the project would generate approximately 1,578.3 MT of CO2e each year which is less than the lowest screening thresholds established by SCAQMD tiered approach of 3,000 MT of CO2e each year for mixed use project and 10,000 MT of CO2e each year for industrial projects. Since the project would not exceed these thresholds, the project would not be required to implement mitigation measures to reduce GHG emissions by 15% as proposed by the SANBAG County Regional GHG Reduction Plan. Given this no significant GHG impacts are expected with implementation of the proposed project.

b) *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?* ***Less than Significant Impact***

The proposed project does not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. As previously addressed, the City of San Bernardino participates in the SANBAG San Bernardino County Regional GHG Reduction Plan. The SANBAG's GHG Reduction Plan was prepared to assist the City in conforming to the GHG emissions reductions as mandated under Assembly Bill (AB) 32. Based on that plan, the City has selected a 15% reduction strategy below its 2008 levels by 2020.

As described above, neither the SANBAG's GHG Reduction Plan nor the City of San Bernardino have adopted specific screening thresholds; therefore the City of San Bernardino uses the latest SCAQMD guidance for GHG impacts. SCAQMD's screening thresholds are 10,000 MT/year CO2e for industrial projects, 3,500 MT/year CO2e for residential projects and 3,000 MT/year CO2e for mixed use projects. Based on this, the proposed project was screened under the 10,000 MT/year CO2e industrial screening threshold. If the project exceeds these thresholds, the project would be required to implement mitigation measures to reduce GHG impacts by 15% below the City's 2008 levels by 2020.

At a level of 1,578.3 metric tons of CO2e each year (as shown in **Table 8**), the project's GHG emissions level falls below the SCAQMD screening threshold of 3,000 metric tons per year of CO2e for mixed use project, and well below the SCAQMD's GHG emissions threshold of 10,000 metric tons per year of CO2e for industrial projects. Therefore, as the project's emissions do not exceed the SANBAG's GHG Reduction Plan or SCAQMD's screening thresholds, the project is consistent with the applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Therefore, impacts are less than significant and no mitigation is required.

Cumulative Impacts

The project's emissions would be below the SCAQMD's threshold for GHG emissions of 3,000 MT per year of CO2e and an industrial project's threshold of 10,000 MT per year of CO2e. As discussed above, the project would not result in a cumulatively considerable impact due to GHGs.

8. Hazards and Hazardous Materials

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Discussion

a) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?* ***Less Than Significant Impact.***

Prior uses on the site are not known to have involved hazardous materials. Once the project is constructed, hazardous materials would be limited to those associated with a warehouse/industrial facility. These include cleaners, paints, solvents; and fertilizers and pesticides for site landscaping. Because these materials are used in very limited quantities, they are not considered a hazard to the public. Adherence to federal, State, and local health

and safety requirements regarding these substances would preclude potential impacts. No mitigation is required.

b) *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?* ***Less Than Significant Impact.***

The proposed project is not anticipated to result in a release of hazardous materials into the environment. The proposed facility would be expected to use limited hazardous materials and substances which would be limited to cleaners, paints, solvents; and fertilizers and pesticides for site landscaping. All materials and substances would be subject to applicable health and safety requirements. A less than significant impact would occur and no mitigation is required.

c) *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?* ***No Impact.***

No schools are presently located within one-quarter mile of the project site. The closest school site is Shandin Hills Middle School which is located approximately 1.4 miles east of the project site. Any future school developed within the surrounding area would be subject to the oversight of the California Department of Toxic Substances Control, as required by State law. No impacts would occur and no mitigation is required.

d) *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?* ***No Impact.***

The project site is not included on a hazardous sites list compiled pursuant to California Government Code Section 65962.5.[2] In addition, a Phase I Environmental Site Assessment was prepared for the project site by Iris Environmental in December 2015. According to that report, there were no Recognized Environmental Conditions (REC) (as defined by ASTM Practice E 1527-13) identified in association with the site. No significant adverse impacts relative to hazardous materials sites would result with project implementation. No mitigation is required.

e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?* ***No Impact.***

San Bernardino International Airport is located approximately seven miles southeast of the project site. Furthermore, the proposed project would be consistent with the surrounding area and would not create a safety hazard for people residing or working in the project area. No impacts would occur and no mitigation is required.

f) *For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?* ***No Impact.***

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[2] California, State of, Department of Toxic Substances Control, DTSC's Hazardous Waste and Substances Site List - Site Cleanup (Cortese List). Available at: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm. Accessed: April 18, 2016.

The proposed project site is not located within the vicinity of a private airstrip and would not result in a safety hazard for people residing or working in the project area. No impacts would occur and no mitigation is required.

g) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?* ***Less Than Significant Impact.***

The proposed project would have no impacts on emergency response plans or emergency evacuation plans. The City has adopted an Emergency Management Plan to identify evacuation routes, emergency facilities, and City personnel and equipment available to effectively deal with emergency situations. No revisions to the adopted Emergency Management Plan would be required as a result of the proposed project. Primary access to all major roads would be maintained during construction of the proposed project. Therefore, impacts would be less than significant and no mitigation is required.

h) *Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?* ***No Impact.***

The proposed project would not expose people or structures to a risk of loss, injury or death involving wildland fires. The project site is in a developed urban area and it is not adjacent to any wildland areas. Therefore, no impact would occur in regard to wildland fires and no mitigation is required.

Cumulative Impacts

The incremental effects of the proposed project related to hazards and hazardous materials, if any, are anticipated to be minimal, and any effects would be site-specific. Therefore, the proposed project would not result in incremental effects to hazards or hazardous materials that could be compounded or increased when considered together with similar effects from other past, present, and reasonably foreseeable probable future projects. The proposed project would not result in cumulatively considerable impacts to or from hazards or hazardous materials.

9. Hydrology and Water Quality

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f. Otherwise substantially degrade water quality?	☐	☐	☒	☐
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j. Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion

A Preliminary Drainage Report and a Water Quality Management Plan Stormwater Management Plan were prepared by Thienes Engineering, Inc. in March 2016, to evaluate hydrology and water quality impacts associated with the proposed project. The results and conclusions of the plan are summarized herein.

a) *Violate any water quality standards or waste discharge requirements?* ***Less Than Significant Impact.***

The project site generally surface drains easterly to Georgia Boulevard., with a smaller portion of the site (approximately one acre) located at the southerly end of the site draining to an adjacent property. With implementation of the proposed project, the southwesterly half of the proposed building, the southwesterly portion of the truck yard, the northwesterly portion of the parking lot, and a small portion of the northerly off-site truck yard would drain to catch basins in the on-site truck yard. Runoff would then be conveyed via a proposed storm drain to a set of underground infiltration facilities. Once the design capture volume (DCV) is met, the additional flows would drain to an existing 48-inch storm drain at the southeast property line.

The northeasterly half of the proposed building and the northeasterly portion of the parking lot would drain to a catch basin in the on-site parking lot. Runoff would then be conveyed via a proposed storm drain to another set of underground infiltration facilities. Once the DCV is met, the additional flows would drain to an existing 48-inch storm drain at the southeast property line.

The southeasterly parking lot would drain to a catch basin in the on-site parking lot. Runoff would then be conveyed via a proposed storm drain to a set of underground infiltration facilities. Similar to the rest of the site, once the DCV is met, the additional flows would drain to the same existing 48-inch storm drain at the southeast property line.

The proposed on-site underground infiltration facilities have been sized to capture and reduce the 100-year storm event discharge to the equivalent of a 25 year storm event. The 25-year storm event would be allowed to discharge off site as described above. The proposed underground infiltration facilities would capture and treat storm water generated on the site prior to discharge off -site; therefore, impacts to water quality would be less than significant and no mitigation is required.

To minimize water quality impacts during construction of the proposed project, construction activities would be required to comply with a Stormwater Pollution Prevention Plan (SWPPP) consistent with the General Permit for Stormwater Discharge Associated with Construction Activity (Construction Activity General Permit). The SWPPP would incorporate Best Management Practices (BMPs) such as gravel bags, silt fence, and fiber rolls. Preparation and implementation of a SWPPP would reduce potential impacts to water quality during construction to a less than significant level. No mitigation is required.

b) *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?* ***No Impact.***

The project does not propose to use groundwater. Although the project would result in additional impervious surfaces on site, the project would construct underground infiltration facilities which would detain and treat water prior to discharging into the public storm drain system. Therefore, the proposed project would not significantly impact local groundwater recharge. No impacts would occur in this regard and no mitigation is required.

c) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?* ***No Impact.***

The proposed project would not substantially alter the existing drainage patterns of the site or vicinity. The project site would continue to drain to the public storm drain in Georgia Boulevard. The project proposes to use underground infiltration facilities to treat storm water runoff prior to discharge into the public storm drain system. The site does not contain any streams or rivers; therefore, no would be altered by the proposed project. Therefore, no impact would occur and no mitigation is required.

d) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?* ***Less Than Significant Impact.***

Refer to response V.9(c) above. The proposed project would not substantially alter existing drainage patterns of the site or project vicinity. The project site does not include any streams or rivers. On-site surface run-off would be directed to the on-site underground infiltration facilities. The proposed underground infiltration facilities would also minimize the potential for flooding to occur on site or off site. Impacts would be less than significant and no mitigation is required.

e) *Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?* ***Less Than Significant Impact.***

The underground infiltration facilities were designed in accordance to the procedures and methodologies outlined in the *San Bernardino County Flood Control District Standard Plans* and *Detention Basin Design Criteria for San Bernardino County* (1987). The proposed on-site underground infiltration facilities have been sized to capture and reduce the 100-year storm event discharge to the equivalent of a 25-year storm event. The 25-year storm event would be allowed to discharge off site as described above in response V.9(a). No impacts to the capacity of existing or planned storm water drainage system would occur as a result of the project.

The proposed project would be required to prepare a SWPPP under the National Pollutant Discharge Elimination System (NPDES) General Construction Permit to implement BMPs to minimize storm water runoff during construction. Adherence with the recommendations of the Stormwater Management Plan prepared for the proposed project, and preparation of a SWPPP would reduce possible impacts related to the storm water drainage system to less than significant. No mitigation is required.

f) *Otherwise substantially degrade water quality?* ***Less Than Significant Impact.***

Water quality impacts other than those described in Response V.9(a) above are not anticipated with implementation of the proposed project. Impacts resulting from the project would be less than significant and no mitigation is required.

g) *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?* ***No Impact.***

The proposed project does not propose housing. Therefore, no flood-related impacts would occur in this regard and no mitigation is required.

h) *Place within a 100-year flood hazard area structures which would impede or redirect flood flows?* ***No Impact.***

The project site is covered by Map Number 06071C7940H of the FEMA Flood Insurance Rate Map (FIRM) for San Bernardino County, California and Incorporated Areas. The entire project site is located within Flood Zone X. Flood Zone X has a 0.2 percent annual chance of flood hazard; therefore, the project site is not located within a 100-year flood hazard area. Implementation of the proposed project would not place structures in a 100-year flood hazard area. No impacts would result in this regard and no mitigation is required.

i) *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?* ***No Impact.***

According to the City of San Bernardino's General Plan Safety Element, the project site is not located within the Seven Oaks Dam Inundation area.[3] Therefore, no impact would occur as a result of a failure of a levee or dam and no mitigation is required.

j) *Inundation by seiche, tsunami, or mudflow?* ***No Impact.***

The project site is located approximately 75 miles east of the Pacific Ocean and as referenced above, is not located downstream of a levee or dam. There is no risk of exposure to inundation by seiche or tsunami. The project site is relatively flat so the potential for a mudflow is unlikely. Therefore, no impact would occur and no mitigation is required.

Cumulative Impacts

The potential impacts related to hydrology and storm water runoff are typically site specific. Furthermore, the analysis determined that the implementation of the proposed project would not result in significant impacts. As a result, no cumulative impacts are anticipated.

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[3] City of San Bernardino General Plan. *Safety Element, Figure S-2 Page 10-15*. November 2005.

10. Land Use and Planning

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	☒
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion

a) *Physically divide an established community?* ***No Impact.***

An example of a project that has the potential to divide an established community includes the construction of a new freeway or highway through an established neighborhood. The proposed project would be located on a site in an urban area with similar surrounding land uses. The proposed project would generally blend in with the mix of surrounding uses and would not physically divide an established community. Therefore, no impacts would occur and no mitigation is required.

b) *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?* ***Less Than Significant Impact.***

The City's General Plan land use designation for the project site is Industrial. The City's zoning designation for the site is Industrial Light. The proposed project is consistent with these land use and zoning designations. Therefore, the proposed project would have a less than significant impact on a plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

c) *Conflict with any applicable habitat conservation plan or natural community conservation plan?* ***No Impact.***

The project site is not located within an area designated as a habitat conservation plan or natural community conservation plan. Therefore, the proposed project would not conflict either form of plan.

Cumulative Impacts

The analysis of potential impacts indicated that no impacts would result from the proposed project's implementation. As a result, no cumulative impacts related to land use and planning would occur.

11. Mineral Resources

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☐	☒
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion

a) *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?* ***No Impact.***

The project site is not mapped by the City as an area containing mineral resources. Therefore, the proposed project would not result in the loss of availability of a known mineral resource and no mitigation is required.

b) *Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?* ***No Impact.***

The project site is not located in an area that has been identified as a locally important mineral resource recovery site. Therefore, no impacts would occur and no mitigation is required.

Cumulative Impacts

The analysis of potential impacts indicated that no impacts would result from the proposed project. As a result, no cumulative impacts related to mineral resources would occur.

12. Noise

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity and that interferes with or disrupts normal activities. The human environment is generally characterized by a certain consistent noise level that varies by area. This is called ambient, or background noise. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, perceived importance of the noise and its appropriateness in the setting; time of day and type of activity during which the noise occurs, and sensitivity of the individual.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by several variables, including frequency and intensity. Frequency describes the sound's pitch and is measured in cycles per second, or hertz (Hz). Intensity describes the sound's loudness and is measured in decibels (dB). A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above about 120 dB begin to be felt inside the human ear as discomfort and eventually as pain at still higher levels. The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB.

Decibels are measured using a logarithmic scale; thus, the average person perceives a change in sound level of about 10 dB as a doubling (or halving) of the sound's loudness. This relation holds true for sounds of any loudness.

Because of the logarithmic nature of the decibel unit, sound levels cannot be added or subtracted directly and are somewhat cumbersome to handle mathematically. A simple rule is useful, however, in dealing with sound levels. If a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. Thus, for example, 60 dB + 60 dB = 63 dB, and 80 dB + 80 dB = 83 dB.

The normal human ear can detect sounds that range in frequency from about 20 Hz to 20,000 Hz. However, all sounds in this wide range of frequencies are not heard equally well by the human ear, which is most sensitive to frequencies in the range of 1,000 Hz to 4,000 Hz. This frequency dependence can be taken into account by applying a correction to each frequency range to approximate the human ear's sensitivity within each range. This is called A-weighting and is commonly used in measurements of community environmental noise. The A-weighted sound pressure level (abbreviated as dBA) is the sound level with the "A-weighting" frequency correction. In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve.

Because community noise fluctuates over time, a single measure called the Equivalent Sound Level (Leq) is often used to describe the time-varying character of community noise. The Leq is the energy-averaged A-weighted sound level during a measured time interval, and is equal to the level of a continuous steady sound containing the same total acoustical energy over the averaging time period as the actual time-varying sound. It is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the Lmax and Lmin indicators, which represent the root-mean-square maximum and minimum noise levels obtained during the measurement interval. The Lmin value obtained for a particular monitoring location is often called the "acoustic floor" for that location.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. They are the noise levels equaled or exceeded during 10, 50, and 90 percent of a stated time, respectively. Sound levels associated with L10 typically describe transient or short-term events, whereas levels associated with L90 describe the steady-state (or most prevalent) noise conditions.

Another sound measure known as the Community Noise Equivalent Level (CNEL) is an adjusted average A-weighted sound level for a 24-hour day. It is calculated by adding a 5 dB adjustment to sound levels during evening hours (7:00 p.m. to 10:00 p.m.) and a 10 dB adjustment to sound levels during nighttime hours (10:00 p.m. to 7:00 a.m.). These adjustments compensate for the increased sensitivity to noise during the typically quieter evening and nighttime hours. The CNEL is used by the State of California and the City to evaluate land use compatibility with respect to transportation noise.

The City's Noise Ordinance (19.20.030.15 of the Development Code) specifies that no exterior noise level shall exceed 65dBA and no interior noise level shall exceed 45dBA in residential areas. The City does not specify noise level limits for uses other than residential.

Additionally, the City's Municipal Code (8.44.020 of the Municipal Code) prohibits the operation or use between the hours of 10:00 p.m and 7:00 a.m of any pile driver, steam shovel, pneumatic hammers, derrick, steam or electric hoist, power driven saw, or any other tool or apparatus, the use of which is attended by loud and excessive noise.

Existing Noise Environment

Some land uses are considered sensitive to noise. Noise-sensitive receptors are associated with indoor and/or outdoor activities subject to stress and/or significant interference from noise, such as residential dwellings, transient lodging, dormitories, hospitals, educational facilities, public assembly facilities, amphitheaters, playgrounds, congregate care facilities, childcare facilities and libraries. Industrial and commercial land uses are generally not considered sensitive to noise.

The project site is located in a predominately industrial and commercial area. However, there is a mix of single-family residences and commercial properties approximately 330 feet to the southwest of the project site. There is an existing railroad line between the project site and the residences.

The primary sources of noise within the proposed project area are vehicular traffic including automobiles, trucks, buses and motorcycles. Other sources of noise include stationary noise sources associated with nearby industrial activity and the railroad that borders the project site to the southwest.

The project site is located on the southwest corner of Saratoga Way and Georgia Boulevard. Noise concerns for area are mainly associated with traffic noise along Hallmark Parkway and Interstate 215 to the east, and the railroad lines adjacent to the project site to the southwest. The level of vehicular traffic noise varies with traffic volume, speed, vehicle mix (i.e., cars, trucks, heavy trucks), and the distance from the centerline of the roadway. Figure N-2 *Future Roadway Noise Contours* in the City's General Plan shows that the project site falls in between the future 65dBA and 70 dBA noise contour.[4]

<u>Applicable General Plan Policies</u>

The City's General Plan includes five applicable policies with respect to reducing or mitigating impacts from noise.

14.1.4 Prohibit the development of new or expansion of existing industrial, commercial, or other uses that generate noise impacts on housing, schools, health care facilities or other sensitive uses above a Ldn of 65dBA.

14.2.3 Require that development that increases the ambient noise level adjacent to noise-sensitive land uses provide appropriate mitigation measures.

14.2.10 Provide for the development of alternative transportation modes such as bicycle paths and pedestrian walkways to minimize the number of automobile trips.

14.2.12 Require that commercial and industrial uses implement transportation demand management programs consistent with the Air Quality Management Plan that provide incentives for carpooling, van pools, and the use of public transit to reduce traffic and associated noise levels in the City.

14.3.1 Require that construction activities adjacent to residential units be limited as necessary to prevent adverse noise impacts.

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[4] City of San Bernardino General Plan. *Noise Element, Figure N-2 Page 14-17*. November 2005.

14.3.2 Require that construction activities employ feasible and practical techniques that minimize the noise impacts on adjacent uses.

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? ***Less Than Significant.***

Noise impacts are considered significant for residences if exterior noise levels exceed 65 dBA CNEL and interior noise levels exceed 45 dBA CNEL. As discussed above, the project site is not within an existing residential area. There is a mix of single-family residences and commercial properties approximately 330 feet to the southwest of the project site with a railroad located between the project site and the homes. Given there is no adjacent residential uses to the project site, the impact is less than significant and no mitigation is required.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? Determination: ***Less Than Significant***

The City's Ordinance (19.20.030.28 of the Development Code) specifies that no vibration associated with any use shall be permitted which is discernible beyond the boundary line or the property. The proposed project does not involve heavy manufacturing drilling or other subterranean activities that would generate excessive ground borne vibration or ground borne noise levels. In addition, construction activities for the proposed project are not anticipated to involve pile driving or blasting; therefore, a less than significant impact would occur and no mitigation is required.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? ***Less Than Significant***

Noise levels associated with the proposed project would increase over existing noise levels. However, as discussed under V.12(a) above, the project site is located in a predominately industrial and commercial area. Residential uses are located approximately 330 feet to the southwest of the project site. However, there is an existing railroad line in between the project site and the residential uses; therefore, impacts are less than significant and no mitigation is required.

d) Substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? ***Less Than Significant With Mitigation Incorporated.***

Construction activities would be compliant with applicable noise regulations as defined in City's Municipal Code (8.44.020 of the Municipal Code). As a condition of project approval, the City would require that construction activities occur consistent with these requirements to avoid temporary construction noise impacts. Although the City has an exemption for construction-related noise, the following noise reduction measures are provided to reduce temporary noise levels. With implementation of Mitigation Measures N-1 through 9, noise impacts during construction would be less than significant.

Mitigation Measures

<u>Construction</u>

N-1 During all project site excavation and grading on site, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

N-2 The contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

N-3 Equipment shall be shut off and not left to idle when not in use.

N-4 The contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.

N-5 The project applicant shall mandate that the construction contractor prohibit the use of music or sound amplification on the project site during construction.

N-6 The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment.

N-7 Limit the use of heavy equipment or vibratory rollers and soil compressors along the project boundaries to the greatest degree possible. It is acknowledged that some soil compression may be necessary along the project boundaries.

N-8 Jackhammers, pneumatic equipment and all other portable stationary noise sources shall be shielded and noise shall be directed away from sensitive receptors.

N-9 For the duration of construction activities, the construction manager shall serve as the contact person should noise levels become disruptive to local residents. A sign should be posted at the project site with the contact phone number.

e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?* ***No Impact.***

San Bernardino International Airport is located approximately seven miles to the southeast of the project site. No significant noise levels occur at the project site; no impact would occur and no mitigation is required.

f) *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?* ***No Impact.***

The proposed project site is not located within the vicinity of a private airstrip and therefore, would not expose persons to excessive airport-related noise levels. No mitigation is required.

Cumulative Impacts

As discussed above, all noise impacts can be mitigated to a less than significant level. Construction noise impacts are by nature localized. The distance of separation among the proposed project and other cumulative projects would be such that the temporary noise and vibration effects of the proposed project would not be compounded or increased by similar noise or vibration effects from other cumulative projects. Therefore, cumulative impacts relative to temporary and permanent noise generation associated with the proposed project would not be cumulatively considerable, and thus, less than significant.

13. Population and Housing

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a) *Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?* ***No Impact.***

The project proposes the development of an industrial building and does not propose residential development. Although development of the facility would create additional job opportunities, it would not substantially induce growth in the area. Roads and infrastructure are already in place to serve the project, and no additional roadway extensions or infrastructure would be required. As the project does not propose new residences or additional roads, there would be no substantial population growth induced by the proposed project; no mitigation is required.

b) *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?* ***No Impact*** *and;*

c) *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?* ***No Impact.***

The proposed project would allow for the construction of one industrial building and would not incorporate residential uses. There are currently no residential structures on the site and therefore, the proposed project would not necessitate the construction of replacement housing elsewhere.

As discussed above in threshold 13.b, the site of the proposed project site does not include existing housing; therefore, the proposed project would not facilitate the displacement of residents and no related impact would occur and no mitigation is required.

Cumulative Impacts

The proposed project would not result in direct or indirect permanent or temporary impacts related to population or housing. Therefore, the proposed project would not result in incremental effects to population and housing that could be compounded or increased when considered together with similar effects from other past, present, and reasonably foreseeable probable future projects. As a result, no cumulative impacts related to population and housing would occur.

14. Public Services

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☒	☐
ii. Police protection?	☐	☐	☒	☐
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☒	☐
v. Other public facilities?	☐	☐	☐	☒

Discussion

1) *Fire protection?* ***Less Than Significant Impact.***

Fire protection services would be provided by the City of San Bernardino Fire Department. The Fire Department has 161 Emergency Operations personnel. The Fire Department staffs 12 fire engine companies, 2 aerial truck companies, 1 heavy rescue, 5 4-wheel drive brush engines, 1 hazardous material response rig, and 1 medic squad housed in 12 stations in the City. The closest fire station to the project site is Station #225 located at 1640 Kendall Drive, approximately 0.95 mile northeast of the project site. This station houses one type 1 fire engine and the Fire Department's hazardous materials unit.

The project site is located within the City limits and within the service area of the Fire Department. Development of the project site as proposed by the project may incrementally increase the demand for fire protection services; consequently, the proposed project is subject to City fire suppression development impact fees. However, development would not increase to a substantial level considering the site's location and surrounding area of similar uses. Therefore, impacts would be less than significant and no mitigation is required.

2) *Police protection?* ***Less Than Significant Impact.***

Police protection services would be provided by the City of San Bernardino Police Department. The Police Department has 312 sworn officers and 150 non-sworn employees. The San Bernardino County Police Officer Training Center is located 0.1 mile east of the project site on Hallmark Parkway. However the closest police station is located at 710 North D Street, approximately 4.75 miles southwest of the project site.

Although a new warehouse/industrial building would be constructed and operate on the project site, the proposed project would be located in an urbanized area and would not result in a substantial increase in demand on police services. It is not anticipated to increase response times to the project site or vicinity. As required for a development of this type, the proposed project is subject to law enforcement development impact fees as imposed by the City of San Bernardino. The project does not propose or require new or physically altered police protection facilities. Therefore, impacts would be less than significant and no mitigation is required.

3) *Schools?* ***No Impact.***

The proposed project is a non-residential land use. Implementation of the proposed project would not directly result in an increased population in the City and would therefore not increase the need for the construction of additional school facilities. Furthermore, the San Bernardino City Unified School District would require development impact fees be paid by the applicant based on the square footage of the proposed project. Upon payment of the required fees, no significant impact to school services or facilities would occur and no mitigation is required.

4) *Parks?* ***Less than Significant Impact.***

The proposed project is a warehouse/industrial building and does not include a residential component. As such, the proposed project would not create a significant increased demand or need for the construction of park facilities. Therefore, the impact would be less than significant and no mitigation is required.

5) *Other public facilities?* ***No Impact.***

The proposed project would not result in a direct increase in population within the City; therefore, no impacts to other public facilities would occur with project implementation and no mitigation is required.

Cumulative Impacts

The proposed project would not result in a significant impact to any public services or facilities. Therefore, the proposed project would not result in incremental effects to public services or facilities that could be compounded or increased when considered together with similar effects from other past, present, and reasonably foreseeable probable future projects. The proposed project would not result in cumulatively considerable impacts to public services or facilities.

15. Recreation

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

a) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?* ***No Impact.***

The project applicant proposes development of a warehouse/industrial building to include office space, parking and landscaping. Because the project does not include development of any residences, which could generate increased demand for parks and recreational facilities, implementation of the proposed project would not generate an increase in demand on existing public or private parks or other recreational facilities that would either result in or increase physical deterioration of the facility. Therefore, no impact would result from the proposed project and no mitigation is required.

b) *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?* ***No Impact.***

As previously addressed, the proposed project does not include residential development and would not create a significant increased demand or need for the construction of park facilities. Implementation of the proposed project would not include recreational facilities, nor would it require the construction or expansion of recreational facilities. Therefore, no impact would result from the proposed project and no mitigation is required.

Cumulative Impacts

The proposed project would not result in an increased use of recreational facilities or require construction or expansion of existing recreational facilities. Therefore, no cumulative impacts on recreational facilities would result from project implementation.

16. Transportation/Traffic

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☐	☒
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e. Result in inadequate emergency access?	☐	☐	☒	☐
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?	☐	☐	☐	☒

A Traffic Impact Study was prepared by Kimley-Horn and Associates (July 2016) to assess the potential traffic impacts of the proposed project. The findings of the TIS are summarized in this Initial Study; the traffic study is provided as Appendix E.

Discussion

a) *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?* ***Less Than Significant.***

The traffic study area was established in consultation with City staff through the Scoping Agreement process (City of San Bernardino Traffic Impact Study Guidelines). The traffic study area includes seven intersections as identified below.

- Palm Avenue at Hallmark Parkway
- Palm Avenue at I-215 SB Ramps
- Palm Avenue at I-215 NB Ramps
- Palm Avenue at Kendall Drive/Little League Drive
- Hallmark Parkway at Saratoga Way
- University Parkway at Hallmark Parkway
- University Parkway at I-215 SB Ramps
- University Parkway at I-215 NB Ramps
- University Parkway at Kendall Drive
- Georgia Boulevard at North Driveway
- Georgia Boulevard at South Driveway

Morning and evening peak hour traffic conditions were analyzed for the following scenarios:

- Existing Conditions
- Opening Year Base
- Opening Year Base Plus Other Projects
- Opening Year Base Plus Other Projects Plus Project Traffic
- Future Build-Out 2035 Cumulative Base
- Future Build-Out 2035 Cumulative Base Plus Project

Peak hour intersection operations at signalized and unsignalized intersections were evaluated using the methods prescribed in the Highway Capacity Manual (HCM) 2010, consistent with the requirements of the City of San Bernardino and the San Bernardino County Congestion Management Program (CMP). The City of San Bernardino guidelines require analysis of traffic operations to be based on the vehicular delay methodologies of the HCM (Transportation Research Board Special Report 209).

The following describes the roadways within the traffic study area for the proposed project.

Georgia Boulevard – Georgia Boulevard is currently a two-lane roadway that provides direct access for local businesses and development and allows on-street parking. Georgia Boulevard would provide direct access to the proposed project via two full-movement driveways.

Hallmark Parkway – Hallmark Parkway is currently a four-lane roadway through the study area with left-turn lanes at arterial intersections. Hallmark Parkway provides truck access for local businesses and development. The posted speed limit along Hallmark Parkway is 50 miles per hour, and on-street parking is not allowed. Hallmark Parkway is designated on the City of San Bernardino General Plan Circulation Element as a Secondary Arterial, which would provide four travel lanes within 88 feet of right-of-way.

University Parkway – University Parkway is currently a four- to six-lane roadway through the study area, with left-turn lanes at arterial intersections. University Parkway provides truck access to Secondary Arterials and Collectors. The posted speed limit along University

Parkway is 40 miles per hour. University Parkway is designated on the City of San Bernardino Circulation Element as a Major Arterial, which would provide six to eight travel lanes within 100 feet of right of- way.

Kendall Drive – Kendall Drive is currently a two-lane roadway within the study area, with left turn lanes at arterial intersections. The posted speed limit along Kendall Drive is 50 miles per hour. Kendall Drive is designated on the City of San Bernardino Circulation Element as a Major Arterial, which would provide six to eight travel lanes within 100 feet of right-of-way.

Palm Avenue – Palm Avenue is currently a two- to four-lane roadway within the study area, with left-turn lanes at arterial intersections. The posted speed limit along Palm Avenue is 45 miles per hour. Palm Avenue is designated on the City of San Bernardino Circulation Element as a Secondary Arterial, which would provide four travel lanes within 88 feet of right-of-way.

Significance Criteria

The City of San Bernardino General Plan Circulation Element establishes minimum Level of Service (LOS) standards, which require that City intersections operate at LOS D or better during the morning and evening peak hours. The City's Traffic Study Guidelines require new development to mitigate impacts that cause the level of service to fall below LOS D, or the peak hour volume to- capacity (v/c) ratio to increase as follows:

Level of Service (Without Project)	V/C Difference
C	>0.04
D	>0.02
E, F	>0.01

Mitigation would be required to either fix the deficiency, or reduce the v/c ratio so that it is below the level of service that occurs without the project. A traffic impact is considered significant if the project both (1) contributes measurable traffic to and (2) substantially and adversely changes the level of service at any off-site location projected to experience deficient operations under foreseeable cumulative conditions, where feasible improvements consistent with the City of San Bernardino General Plan cannot be constructed.

Existing Conditions

As identified in **Table 9: Summary of Intersection Operation**, all traffic study area intersections are currently operating at an acceptable level of service (LOS D or better) during both the morning and evening peak hours with the exception of Palm Avenue at the I-215 southbound ramps in the morning and University Parkway at the I-215 northbound ramps in the morning and evening peak hours.

Table 9: Summary of Intersection Operation Existing Conditions

Int. #	Intersection	Traffic Control	Peak Hour	Existing Conditions		
				Delay (sec/veh)	V/C	LOS
1	Palm Avenue at Hallmark Parkway	U	AM	16.7	0.460	C
			PM	15.0	0.390	B
2	Palm Avenue at I-215 SB Ramps	S	AM	86.3	1.002	**F**
			PM	37.1	0.627	D
3	Palm Avenue at I-215 NB Ramps	S	AM	21.3	0.743	C
			PM	23.2	0.695	C
4	Palm Avenue at Kendall Drive/Little League Drive	S	AM	33.1	0.657	C
			PM	31.0	0.579	C
5	Hallmark Parkway at Saratoga Way	U	AM	11.7	0.290	B
			PM	14.8	0.340	B
6	University Parkway at Hallmark Parkway	S	AM	31.3	0.431	C
			PM	32.0	0.559	C
7	University Parkway at I-215 SB Ramps	S	AM	25.2	0.685	C
			PM	35.3	0.800	D
8	University Parkway at I-215 NB Ramps	S	AM	84.9	1.058	**F**
			PM	126.4	1.192	**F**
9	University Parkway at Kendall Drive	S	AM	30.7	0.604	C
			PM	33.5	0.686	C

Notes:
Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst movement.
Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.
S = Signalized
U = Unsignalized
Source: Kimley-Horn, 2016.

Opening Year 2017: Existing Plus Growth

For the purpose of this Initial Study, the project's Opening Year (the year the project would be constructed and occupied) is 2017. Based on consultation with City staff, an ambient growth rate of 3.0 percent per year to Opening Year 2017 was applied to existing traffic volumes to develop Opening Year 2017 Base forecasts.

As indicated in **Table 10: Summary of Intersection Operations Opening Year 2017 Base Conditions,** all traffic study area intersections would continue to operate at an acceptable level of service with the addition of ambient growth with the exception of the following intersection:

- Palm Avenue at the I-215 southbound ramps in the morning peak hour and University Parkway at the I-215 northbound ramps in the morning and evening peak hours.

Table 10: Summary of Intersection Operations Opening Year 2017 Base Conditions

Int. #	Intersection	Peak Hour	Opening Year Base Conditions		
			Delay (sec/veh)	V/C	LOS
1	Palm Avenue at Hallmark Parkway	AM	17.2	0.460	C
		PM	15.3	0.400	C
2	Palm Avenue at I-215 SB Ramps	AM	94.6	1.032	**F**
		PM	37.9	0.647	D
3	Palm Avenue at I-215 NB Ramps	AM	16.2	0.461	B
		PM	24.0	0.715	C
4	Palm Avenue at Kendall Drive/Little League Drive	AM	33.7	0.677	C
		PM	31.4	0.597	C
5	Hallmark Parkway at Saratoga Way	AM	11.8	0.290	B
		PM	15.1	0.340	C
6	University Parkway at Hallmark Parkway	AM	31.7	0.444	C
		PM	32.5	0.576	C
7	University Parkway at I-215 SB Ramps	AM	26.1	0.704	C
		PM	39.0	0.824	D
8	University Parkway at I-215 NB Ramps	AM	113.3	1.114	**F**
		PM	138.7	1.227	**F**
9	University Parkway at Kendall Drive	AM	31.3	0.622	C
		PM	34.3	0.707	C

Notes:
Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst movement.
Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.

Source: Kimley-Horn, 2016.

Opening Year 2017: Existing Plus Other Projects Condition

Information about Other Projects in the area was provided by the City of San Bernardino. Other Projects are any projects that has been approved but are not yet constructed/occupied, and projects that are in various stages of the application and approval process but have not yet been approved. A summary of Other Projects in the project vicinity and the trip generation associated with each project is provided in **Table 11, Summary of Other Projects.**

Table 11: Summary of Other Projects

Project Number	Location	Land Use	Quantity	Unit	Trip Generation Estimates						
					Daily	AM Peak Hour			PM Peak Hour		
						In	Out	Total	In	Out	Total
1	4020 E. Highland Avenue	Shopping Center	18.000	KSF	769	11	7	18	32	35	67
2	575 W. Baseline Street	Shopping Center	20.000	KSF	854	12	7	19	36	39	75
3	Waterman Gardens	Senior Adult Housing-Detached	74	DU	272	6	11	17	12	8	20
		Apartment	337	DU	2,241	34	137	171	136	73	209
		Residential Condominium/Townhouse	38	DU	221	3	14	17	13	7	20
4	1064 W. Highland Avenue	Fast-Food Restaurant w/ Drive-Through	2.300	KSF	1,141	53	51	104	39	36	75
5	1107 W. 5th Street	Tire Store	1.575	KSF	39	3	2	5	3	4	7
6	1241 W. 5th Street	Quality Restaurant	6.365	KSF	573	4	1	5	32	16	48
7	1890 West Highland Avenue	Shopping Center	12.400	KSF	529	7	5	12	22	24	46
8	216 E. Baseline Street	General Office Building	5.200	KSF	57	7	1	8	1	6	7
9	2226 W. Foothill Boulevard	Residential Condominium/Townhouse	53	DU	308	4	19	23	18	9	27
10	Palm Avenue and Industrial Parkway	High-Cube Warehouse/Distribution Center	678.275	KSF	1,140	52	23	75	25	56	81
11	2865 N. Golden Avenue	Residential Condominium/Townhouse	3	DU	17	0	1	1	1	1	2
12	1541 W. Baseline Street	Church	4.180	KSF	38	1	1	2	1	1	2
13	2586 Shenandoah Way	Waste Water Treatment in Existing Facility	N/A	N/A	*	4	2	6	0	1	1
14	3909 N. Hallmark Parkway	Convenience Market (Open 15-16 Hours)	0.650	KSF	*	10	10	20	11	11	22
15	4680 N. Hallmark Parkway	Church	120.000	KSF	1,093	42	26	68	32	34	66
16	Kendall Drive and Palm Avenue	Coffee/Donut Shop w/ D.T.	1.822	KSF	1,491	93	90	183	39	39	78
		Fast-Food Restaurant w/ Drive-Through	3.000	KSF	1,488	69	67	136	51	47	98
17	2424 Kendall Drive	Day Care Center	68	Student	298	29	26	55	26	29	55
18	University Parkway and State Street	Coffee/Donut Shop w/ D.T.	3.600	KSF	2,947	185	177	362	77	77	154
19	5th Street and Waterman Avenue	Gasoline Station w/ Convenience Market	12	Fueling Position	4,818	115	111	226	73	73	146
20	3972 N. Waterman Avenue	Hotel	25	Room	204	8	5	13	8	7	15
		General Office Building	-9.796	KSF	-108	-13	-2	-15	-2	-12	-14
21	2114 W. Highland Avenue	Gasoline Station w/ Conv. Mkt. & Car Wash	8	Fueling Position	1,223	48	46	94	57	54	111
22	Kendall Drive and Campus Parkway	Recreational Community Center	5.851	KSF	198	8	4	12	8	8	16
23	Olive Avenue and Verdemont Drive	Single-Family Detached Housing	6	DU	57	1	3	4	4	2	6
24	2705 W. Lexington Way	Warehousing	155.000	KSF	552	37	10	47	12	37	49
25	1320 N. Lassen Street	General Light Industrial	265.716	KSF	1,852	215	29	244	31	227	258
26	Hallmark Parkway and Shenandoah Way	Warehousing	340.080	KSF	1,211	81	21	102	27	82	109
27	Little League Drive and Palm Avenue (Rancho Palm Specific Plan)	Single-Family Detached Housing	132	DU	1,257	25	74	99	83	49	132
		Shopping Center	98.000	KSF	4,185	58	36	94	175	189	364
28	Lytle Creek SP (10% capacity)	Single-Family Detached Housing	504	DU	4,823	95	284	379	321	188	509
		Condominium	336	DU	1,952	25	123	148	117	58	175
29	Renaissance Marketplace (25% of capacity)	Hotel	110.000	ROOMS	225	10	6	16	9	8	16
		Gasoline/Service Station	4.200	KSF	177	7	6	13	7	7	15

Table 11: Summary of Other Projects

Project Number	Location	Land Use	Quantity	Unit	Trip Generation Estimates						
					Daily	AM Peak Hour			PM Peak Hour		
						In	Out	Total	In	Out	Total
		Fast-Food Restaurant w/D.T.	9.400	KSF	1,166	59	57	116	41	38	80
		South Side Area	523.567	KSF	3,335	53	24	77	137	154	291
		Internal Capture (Between North and South)			-177	-8	-8	-16	-7	-7	-14
Total Project Trips					**42,466**	**1,453**	**1,508**	**2.960**	**1,708**	**1,716**	**3,423**

KSF = Thousand Square Feet, DU = Dwelling Units

Source: Kimley-Horn, 2016.

Trip Generation

Trip generation information for Other Projects was obtained either from approved traffic studies, where available; or developed by Kimley-Horn if approved traffic studies were not available. Project information and trip generation assumptions for Other Projects are provided in Appendix D of the traffic study.

Trip Distribution and Assignment

The trip distribution and assignment for the Other Projects were either obtained from approved traffic studies, where available; or were developed by Kimley-Horn if approved traffic studies were not available. Trip distribution assumptions for Other Projects (Appendix D of the traffic study).

Peak Hour Operating Conditions

The Other Projects peak hour turning movement volumes were added to the Opening Year 2017 Base traffic volumes. The intersection level of service analysis was conducted for the morning and evening peak hours for the Opening Year 2017 Base Plus Other Projects traffic scenario. The results are shown on **Table 12, Summary of Intersection Operations Opening Year Base Plus Other Projects Conditions.**

Table 12: Summary of Intersection Operations Opening Year Base Plus Other Projects Conditions

Int. #	Intersection	Peak Hour	Opening Year Base Conditions		
			Delay (sec/veh)	V/C	LOS
1	Palm Avenue at Hallmark Parkway	AM	23.4	0.460	C
		PM	18.7	0.430	C
2	Palm Avenue at I-215 SB Ramps	AM	146.5	1.219	F
		PM	47.7	0.804	D
3	Palm Avenue at I-215 NB Ramps	AM	24.6	0.961	C
		PM	30.0	0.965	C
4	Palm Avenue at Kendall Drive/Little League Drive	AM	38.2	0.762	D
		PM	38.4	0.698	D
5	Hallmark Parkway at Saratoga Way	AM	14.6	0.360	B
		PM	19.7	0.420	C
6	University Parkway at Hallmark Parkway	AM	35.0	0.584	C
		PM	34.8	0.640	C
7	University Parkway at I-215 SB Ramps	AM	28.2	0.747	C
		PM	41.7	0.870	D
8	University Parkway at I-215 NB Ramps	AM	127.6	1.160	F
		PM	147.8	1.253	F
9	University Parkway at Kendall Drive	AM	35.5	0.703	D
		PM	38.3	0.781	D

Notes:
Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst movement.
Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.

Project Traffic

Project Trip Generation

Trip generation estimates for the proposed project are based on daily and peak hourly trip generation rates obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual (9th Edition). ITE trip generation estimates for the project are based on the trip generation rates for ITE Land Use: Warehouse (Land Use 150).

Passenger vehicle and truck mix rates for the project were derived from the City of Fontana Truck Trip Generation Study, published in August 2003, which indicates that truck trips for a warehouse use make up approximately 19.70 percent of the project trips on a daily basis. The Fontana study specifies a minimum truck rate of 19.70 percent of total project traffic, with 51 percent of trucks being 4+-axle, 23 percent 3-axle, and 26 percent 2-axle. These vehicle classification splits were applied to the daily and peak hour trip generation to develop an estimate of truck volumes by number of axles (2-axle, 3-axle, and 4+-axle trucks) that would be associated with the proposed project.

Passenger car equivalent (PCE) factors, per City recommendations, were then applied to the truck types, based on number of axles (2.0 PCE for 2-axle trucks, 2.5 PCE for 3-axle trucks, and 3.0 PCE for 4+-axle trucks) to determine the total PCE volumes to be generated by the project. With the PCE factors, project is estimated to generate 709 PCE trips on a daily basis, with 60 PCE trips in the morning peak hour, and 64 PCE trips in the evening peak hour. The use of the ITE Trip Generation Manual to estimate project trips and the Fontana Truck Trip Study to determine the truck mix for the warehouse use is in accordance with the San Bernardino Associated Governments (SANBAG) Congestion Management Program traffic study requirements (Appendix I of the traffic study) and current City policy.

Trip generation rates, PCE factors, and the resulting trip generation estimates for the proposed project are summarized on **Table 13, Summary of Project Trip Generation IPT I-215 Distribution Center II Trip Generation Rates** [1]. The project is estimated to generate 722 PCE trips on a daily basis, with 61 PCE trips in the morning peak hour, and 65 PCE trips in the evening peak hour.

Table 13: Summary of Project Trip Generation IPT I-215 Distribution Center II Trip Generation Rates [1]

ITE Land Use		ITE Code	Unit	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Warehousing		150	KSF	3.560	0.237	0.063	0.300	0.080	0.240	0.320
Project Trip Generation										
					AM Peak Hour			PM Peak Hour		
Project Land Use		**Quantity**	**Unit**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Warehousing		153.010	KSF	545	36	10	46	12	37	49
Passenger Vehicles				438	29	8	37	10	30	40
Trucks				107	7	2	9	2	7	9
Project Trips - Passenger Car Equivalents (PCE)										
Vehicle Type	**Vehicle Mix[2]**	**Daily Vehicles**	**PCE Factor [3]**		AM Peak Hour			PM Peak Hour		
				Daily	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Passenger Vehicles	80.3%	438	1.0	438	29	8	37	10	30	40
2-Axle Trucks	5.2%	28	2.0	56	4	1	5	1	4	5
3-Axle Trucks	4.5%	25	2.5	63	4	1	5	1	4	5
4+ Axle Trucks	10.0%	55	3.0	165	11	3	14	4	11	15
Total Truck PCE Trips				284	19	5	24	6	19	25
Total Project PCE Trips				**722**	**48**	**13**	**61**	**16**	**49**	**65**

[1] Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition
[2] Source: Truck Trip Generation Study - City of Fontana, August 2003.
[3] Source: City of San Bernardino Traffic Impact Study Guidelines, June 2015.
PCE = Passenger Car Equivalent; KSF = Thousand Square Feet

Source: Kimley-Horn, 2016.

Trip Distribution and Assignment

Trip distribution assumptions for the project were developed taking into account the proposed site uses, and the routes to and from the freeway system for the warehouse trucks. Separate distribution patterns were assumed for passenger car trips and truck trips. Trip distribution assumptions are shown on Figure 10 in the traffic study for passenger vehicles and on Figure 11 in the traffic study for trucks.

Trip distribution percentages at each study intersection were applied to the project trip generation to determine the project trips through each intersection. The resulting project related peak hour trips at the study intersections are shown on Figure 12 in the traffic study.

Future Conditions With Project

Opening Year 2017 Base Plus Other Projects Plus Project

As identified on **Table 14, Summary of Intersection Operations Opening Year Base Plus Other Projects Plus Project**, the following intersections, with the addition of project traffic, would continue to operate at a deficient level of service:

- #2 – Palm Avenue at I-215 Southbound Ramps: AM – LOS F
- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS F, PM – LOS F

Table 14: Summary of Intersection Operations Opening Year Base Plus Other Projects Plus Project

Int. #	Intersection	Peak Hour	Opening Year Base Plus Other Projects			Opening Year Base Plus Other Projects Plus Project			Project Impact / Significance		
			Delay (sec/veh)	V/C	LOS	Delay (sec/veh)	V/C	LOS	Delay (sec/veh)	V/C	Sig.
1	Palm Avenue at Hallmark Parkway	AM	23.4	0.460	C	24.2	0.460	C	0.8	0.000	No
		PM	18.7	0.430	C	19.2	0.430	C	0.5	0.000	No
2	Palm Avenue at I-215 SB Ramps	AM	146.5	1.219	F	148.4	1.226	F	1.9	0.007	No
		PM	47.7	0.804	D	48.0	0.809	D	0.3	0.005	No
3	Palm Avenue at I-215 NB Ramps	AM	24.6	0.961	C	24.6	0.991	C	0.0	0.030	No
		PM	30.0	0.965	C	30.2	1.001	C	0.2	0.036	No
4	Palm Avenue at Kendall Drive/Little League Drive	AM	38.2	0.762	D	38.2	0.762	D	0.0	0.000	No
		PM	38.4	0.698	D	38.4	0.698	D	0.0	0.000	No
5	Hallmark Parkway at Saratoga Way	AM	14.6	0.360	B	14.7	0.360	B	0.1	0.000	No
		PM	19.7	0.420	C	20.2	0.430	C	0.5	0.010	No
6	University Parkway at Hallmark Parkway	AM	35.0	0.584	C	36.3	0.607	D	1.3	0.023	No
		PM	34.8	0.640	C	35.3	0.652	D	0.5	0.012	No
7	University Parkway at I-215 SB Ramps	AM	28.2	0.747	C	28.4	0.751	C	0.2	0.004	No
		PM	41.7	0.870	D	43.5	0.882	D	1.8	0.012	No
8	University Parkway at I-215 NB Ramps	AM	127.6	1.160	**F**	128.5	1.163	**F**	0.9	0.003	No
		PM	147.8	1.253	**F**	147.9	1.254	**F**	0.1	0.001	No
9	University Parkway at Kendall Drive	AM	35.6	0.703	D	35.8	0.707	D	0.2	0.004	No
		PM	38.3	0.781	D	38.5	0.783	D	0.2	0.002	No
10	Georgia Boulevard at North Driveway	AM	N/A	--	--	8.7	0.200	A	N/A	--	--
		PM	N/A	--	--	8.7	0.200	A	N/A	--	--
11	Georgia Boulevard at South Driveway	AM	N/A	--	--	9.0	0.200	A	N/A	--	--
		PM	N/A	--	--	8.8	0.200	A	N/A	--	--

Notes:
Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst movement.
Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.

Source: Kimley-Horn, 2016.

The project would not result in a significant impact to any of the study intersections in the Opening Year 2017 Base Plus Other Project Plus Project scenario.

Future Build Out Conditions

Future Build-Out 2035 Cumulative Base Conditions

To derive the Future Build-Out 2035 Cumulative Base intersection turning movement volumes, the San Bernardino Transportation Analysis Model (SBTAM) base year 2012 and build-out year 2040 future traffic projections were used. The resulting traffic volumes for Future Build-Out 2035 Cumulative Base are shown on Figure 14 of the traffic study.

Lane geometrics for the study intersections are assumed to be the same as Existing Conditions (Figure 3 of the traffic study). There are no programmed improvements in the study area based on the SCAG Regional Transportation Plan.

Intersection Level of Service analysis was conducted for the morning and evening peak hours for the Future Build-Out 2035 Cumulative Base condition.

As identified in **Table 15, Summary of Intersection Operations Future Build-Out Year 2035 Without And With Project**, under Build-Out 2035 conditions, the following intersection would operate at deficient level of service:

- #8 – University Parkway at I-215 Northbound Ramps: AM-LOS E, PM-LOS F

Table 15: Summary of Intersection Operations Future Build-Out Year 2035 Without And With Project

Int. #	Intersection	Peak Hour	Build-out Conditions Without Project			Build-out Conditions With Project			Project Impact / Significance		
			Delay (sec/veh)	V/C	LOS	Delay (sec/veh)	V/C	LOS	Delay (sec/veh)	V/C	Sig.
1	Palm Avenue at Hallmark Parkway	AM	18.7	0.500	C	19.2	0.500	C	0.5	0.000	No
		PM	22.6	0.540	C	23.3	0.540	C	0.7	0.000	No
2	Palm Avenue at I-215 SB Ramps	AM	38.4	0.783	D	38.9	0.787	D	0.5	0.004	No
		PM	47.0	0.825	D	47.7	0.830	D	0.7	0.005	No
3	Palm Avenue at I-215 NB Ramps	AM	19.8	0.460	B	19.9	0.460	B	0.1	0.000	No
		PM	21.6	0.663	C	21.9	0.675	C	0.3	0.012	No
4	Palm Avenue at Kendall Drive/Little League Drive	AM	35.1	0.711	D	35.1	0.711	D	0.0	0.000	No
		PM	32.0	0.590	C	32.0	0.590	C	0.0	0.000	No
5	Hallmark Parkway at Saratoga Way	AM	16.2	0.300	C	16.2	0.300	C	0.0	0.000	No
		PM	18.1	0.440	C	18.6	0.450	C	0.5	0.010	No
6	University Parkway at Hallmark Parkway	AM	34.4	0.591	C	35.4	0.619	D	1.0	0.028	No
		PM	33.0	0.595	C	33.3	0.604	C	0.3	0.009	No
7	University Parkway at I-215 SB Ramps	AM	25.0	0.733	C	25.1	0.736	C	0.1	0.003	No
		PM	33.8	0.808	C	34.6	0.819	C	0.8	0.011	No
8	University Parkway at I-215 NB Ramps	AM	56.3	0.979	**E**	56.9	0.981	**E**	0.6	0.002	No
		PM	133.4	1.257	**F**	133.6	1.258	**F**	0.2	0.001	No
9	University Parkway at Kendall Drive	AM	30.0	0.588	C	30.1	0.592	C	0.1	0.004	No
		PM	34.2	0.714	C	34.3	0.718	C	0.1	0.004	No
10	Georgia Boulevard at North Driveway	AM	N/A	--	--	8.7	0.200	A	N/A	--	--
		PM	N/A	--	--	8.7	0.200	A	N/A	--	--
11	Georgia Boulevard at South Driveway	AM	N/A	--	--	9.0	0.200	A	N/A	--	--
		PM	N/A	--	--	8.8	0.200	A	N/A	--	--

Notes:
Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst movement.
Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.

Source: Kimley-Horn 2016.

Future Build-Out 2035 Cumulative Base Plus Project

Project-related traffic was added to the Build-Out 2035 Cumulative Base traffic volumes. Build-out 2035 Cumulative Base Plus Project peak hour turning movement volumes at study intersections are show on Figure 15 in the traffic study.

Intersection Level of Service analysis was conducted for the morning and evening peak hours for the Future Build-Out 2035 Cumulative Base Plus Project condition.

As identified in Table 15 under Build-Out 2035 conditions, with the addition of project traffic, the following intersection would operate at deficient level of service:

- #8 – University Parkway at I-215 Northbound Ramps: AM-LOS E, PM-LOS F

The project would not result in a significant impact to any of the study intersections in the Future Build-Out 2035 Cumulative Base Plus Project scenario.

Based on the analysis of each scenario, the project would not result in a significant impact to any of the traffic study area intersections in the study scenarios. Therefore, no mitigation measures are required.

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?* ***Less Than Significant Impact.***

The purpose of the CMP is to develop a coordinated approach to managing and decreasing traffic congestion by linking the various transportation, land use, and air quality planning programs throughout the County, consistent with that of SANBAG. The CMP requires review of substantial individual projects, which might on their own impact the CMP transportation system. Specifically, the CMP Traffic Impact Analysis measures impacts of a project on the CMP Highway System. Compliance with the CMP requirements ensures a city's eligibility to compete for State gas tax funds for local transportation projects.

The CMP requires that a Traffic Impact Analysis must include analysis of any CMP arterial monitoring intersection where a proposed project will add 50 or more trips during either the AM or PM weekday peak hour; and any freeway monitoring location where the project will add 150 or more trips, in either direction, during either the AM or PM peak hour. The proposed project would not add 50 or more trips during either the AM or PM weekday peak hour to a designated CMP intersection; and would not add 150 or more trips to any freeway mainline location, in either direction, during either the AM or PM peak hour. Therefore, the proposed project would not exceed a level of service standard established by the CMP for designated roads or highways. No mitigation is required.

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?* ***No Impact.***

The proposed project would not include any aviation components or structures where height would be an aviation concern. No traffic impacts would occur and no mitigation is required.

d) *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?* ***No Impact.***

With respect to the proposed project, the roadway serving the project site is generally straight and flat. The site driveways and proposed project improvements would be designed to provide adequate sight distance for drivers entering and exiting the project site. The roadway infrastructure surrounding the project site would be developed and/or expanded consistent with City standards. The proposed project would not introduce any new design features that would create hazards to traffic. No significant impacts would occur and no mitigation is required.

e) *Result in inadequate emergency access?* ***Less Than Significant Impact.***

The proposed project would provide two access points from Georgia Boulevard. Constructed roadways and driveways are required to meet access standards of the City Fire Department. Compliance with the Fire Department requirements would ensure impacts remain less than significant. No mitigation is required.

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?* ***No Impact.***

The proposed project has been designed to be consistent with local policies, plans, and programs supporting alternative transportation. The main alternative transportation modes available to the project would be bus transit and bicycle access. Transit service is provided by Omnitrans; Transit Route 2 operates between the City of Loma Linda and the City of San Bernardino, traveling through San Bernardino along Kendall Drive and University Parkway, Transit Routes 5 and 7 operate within the City of San Bernardino, traveling along Northpark Boulevard and University Parkway, and Transit Route 11 operates within the City of San Bernardino, traveling along University Parkway in the vicinity of the project. Sidewalks would be provided along the project frontage. The project would not conflict with adopted policies, plans, or programs regarding alternative modes of transportation. No impact would result and no mitigation is required.

Cumulative Impacts

The traffic study addresses both the project-specific and the project's contribution to cumulative impacts. The project would not have a significant impact to any of the study intersections.

17. Utilities and Service Systems

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g. Comply with federal, State, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Discussion

a) *Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?* ***Less Than Significant Impact.***

The San Bernardino Municipal Water Department (SBMWD) treats, and disposes of all of the City's sewage at the San Bernardino Water Reclamation Plant and the Rapid Infiltration and Extraction. The SBMWD is permitted to treat 40 million gallons per a day (MGD). There is an existing 12-inch cement-lined and wrapped steel main in Georgia Boulevard. Currently, there are no future plans for additional water facilities in Georgia Boulevard[5]. Sanitary sewer lines that serve the project site are maintained by the City of San Bernardino and are already in place to serve the proposed project.

[5] Written correspondence from Ted Brunson, Associate Engineer, San Bernardino Municipal Water Department provided on 5/4/16.

Since the City's wastewater treatment facilities are operating below the permitted capacity of 40 MGD, wastewater generated by the proposed project would not result in an exceedance of any wastewater treatment requirements of the Santa Ana Regional Water Quality Control Board (RWQCB). Impacts would be considered less than significant.

b) *Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?* ***No Impact.***

Sewer and water lines are already in place to serve the project, and expansion of existing facilities or construction of new wastewater treatment facilities would not be needed for implementation of the proposed project. Therefore, there would be no impact and no mitigation is required.

c) *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?* ***No Impact.***

According to the Water Quality Management Plan (WQMP) prepared for this project, the project site generally surface drains easterly to Georgia Boulevard, with a smaller portion of the site (approximately one acre) located at the southerly end of the site draining to an adjacent property. With implementation of the proposed project, the southwesterly half of the proposed building, the southwesterly portion of the truck yard, the northwesterly portion of the parking lot, and a small portion of the northerly off-site truck yard would drain to catch basins in the on-site truck yard. Runoff would then be conveyed via a proposed storm drain to a set of underground infiltration facilities. Once the design capture volume (DCV) is met, the additional flows would drain to an existing 48-inch storm drain at the southeast property line.

The northeasterly half of the proposed building and the northeasterly portion of the parking lot would drain to a catch basin in the on-site parking lot. Runoff would then be conveyed via a proposed storm drain to another set of underground infiltration facilities. Once the DCV is met, the additional flows would drain to an existing 48-inch storm drain at the southeast property line.

The southeasterly parking lot would drain to a catch basin in the on-site parking lot. Runoff would then be conveyed via a proposed storm drain to a set of underground infiltration facilities. Similar to the rest of the site, once the DCV is met, the additional flows would drain to the same existing 48-inch storm drain at the southeast property line.

The proposed on-site underground infiltration facilities have been sized to capture and reduce the 100-year storm event discharge to the equivalent of a 25 year storm event. The 25-year storm event would be allowed to discharge off site as described above. The proposed underground infiltration facilities would capture and treat storm water generated on the site prior to discharge off–site.

The project would not require or result in the construction of new storm water drainage facilities or the expansion of existing facilities. No impacts would result and no mitigation is required.

d) *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?* ***Less Than Significant Impact.***

The City of San Bernardino Municipal Water Department (SBMWD) provides domestic water for the City and the unincorporated areas of San Bernardino[6]. Buildout of the project site was anticipated in the City's General Plan and General Plan EIR and was planned for in the 2010 San Bernardino Valley Regional Urban Water Management Plan[7]. The City's General Plan land use designation for the project site is Industrial. The proposed use of the site by the project is consistent with the General Plan designation. As such, the proposed project would not increase the demand for water supplies on the project site beyond what has been assumed. Therefore, impacts are considered less than significant.

California Governor Jerry Brown issued Executive Order B-29-15 on April 1, 2015. This executive order mandates water conservation for residential, commercial and municipal users. Based on the executive order, the City of San Bernardino which was required to reduce water use by 28%. This executive order was extended in February 2016, and on May 18, 2016, the State Water Board adopted an emergency water conservation regulation that replaces the February 2016 emergency regulation. The May 2016 regulation effective June 2016 through January 2017 requires locally developed conservation standards based upon each agency's specific circumstances. It replaces the prior percentage reduction-based water conservation standard with a localized "stress test" approach. These standards require local water agencies to ensure a three-year supply assuming three more dry years like the ones the state experienced from 2012 to 2015. Water agencies that would face shortages under three additional dry years will be required to meet a conservation standard equal to the amount of shortage. Approval of the Project will not preclude the City from complying with this Executive Order.

e) *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?* ***Less Than Significant Impact.***

Refer to response V.17(a) and (b) above. The wastewater infrastructure needed to serve the project site is already in place, and the City's wastewater facilities have adequate capacity to serve the project's demand. Impacts would be less than significant and no mitigation is required.

f) *Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?* ***Less Than Significant Impact.***

Burrtec Waste Industries, Inc. provides collection services to residential and commercial customers for refuse, recyclables, and green waste[8]. The City uses two Materials Recovery Facilities (MRFs) to manage collected waste and recyclables: the Burrtec Waste Industries, Inc. East Valley Transfer and Recycling MRF, and the Republic Services Inc. Inland Regional MRF. The Burrtec MRF has the expansion capability to accommodate up to 10,000 tons per

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6 City of San Bernardino General Plan. *Utility Element, Page 9-10*. November 2005.

7 Kennedy/Jenks Consultants. 2010 San Bernardino Valley Regional Urban Water Management Plan. 2010 as amended September 2012.

8 City of San Bernardino website, "Public Works – Integrated Waste Management Division." Accessed 5/2/16. http://www.ci.san-bernardino.ca.us/cityhall/publicworks/integrated_waste_management_division/default.asp.

day. It is not anticipated that the proposed project would affect existing facilities and cause the need to construct a new facility[9].

The Mid-Valley Sanitary Landfill, which serves the Valley region of San Bernardino County, has remaining capacity and is anticipated to remain open until 2033[10]. Therefore, impacts would be less than significant and no mitigation is required.

g) *Comply with federal, State, and local statutes and regulations related to solid waste?* ***Less Than Significant Impact.***

Refer to response V.17(f) above. The Mid-Valley Landfill is a facility that has been constructed to meet all required local, State, and federal rules and regulations. The proposed project would not compromise the City's compliance with federal, State and local statues and regulations related to solid waste. Impacts would be less than significant and no mitigation is required.

Cumulative Impacts

The proposed project would have a less than significant impact with respect to utilities/service systems. The proposed project would require water and wastewater infrastructure, as well as solid waste disposal for building facility operation. Development of public utility infrastructure is part of an extensive planning process involving utility providers and jurisdictions with discretionary review authority. The coordination process associated with the preparation of development and infrastructure plans is intended to ensure that adequate resources are available to serve both individual projects and cumulative demand for resources and infrastructure as a result of cumulative growth and development in the area. Individual projects are subject to review for utility capacity to avoid unanticipated interruptions in service or inadequate supplies. Coordination with the utility companies would allow for the provision of utility service to the proposed project and other developments. The proposed project and other planned projects are subject to connection and service fees to assist in facility expansion and service improvements triggered by an increase in demand. Because of the utility planning and coordination activities described above, no significant cumulative utility impacts are anticipated.

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[9] Written correspondence from Gracie Johnson, Integrated Waste Field Inspector, City of San Bernardino provided on 4/25/16.

[10] CalRecycle website, "Facility/Site Summary Details: Mid-Valley Sanitary Landfill (36-AA-0055)." Accessed 5/2/16. http://www.calrecycle.ca.gov/SWFacilities/Directory/36-AA-0055/Detail/.

18. Mandatory Findings of Significance

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?p	☐	☒	☐	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion

a) *Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?* ***Less Than Significant Impact with Mitigation Incorporated.***

As described throughout the Initial Study analysis, the proposed project would not result in any significant impacts to the environment that cannot be mitigated to a less than significant level through the application of uniformly applied mitigation and development policies and/or standards. The proposed project would be required to implement a range of standard and uniformly applied development policies and standards, as well as implement mitigation measures identified in the analysis herein, which would reduce impacts to a less than significant level.

b) *Does the project have impacts which are individually limited, but cumulatively considerable (Cumulatively considerable means the projects incremental effects are considerable when compared to the past, present, and future effects of other projects)?* ***Less Than Significant Impact with Mitigation Incorporated.***

The proposed project would result in significant impacts in the following areas: biological resources, cultural resources, geology/soils and noise. A Mitigation Program has been prepared for each of these environmental issue areas in order to reduce impacts to less

than significant levels. Standard conditions would also be imposed upon the project. Other new development projects within the City would also be subject to these requirements.

All other impacts of the project were determined either to have no impact or to be less than significant, without the need for mitigation. Cumulatively, the proposed project would not result in any significant impacts that would substantially combine with impacts of other current or probable future impacts. Therefore, the proposed project, in conjunction with other future projects, would not result in any cumulatively considerable impacts.

c) *Does the project have environmental effects which will have substantial adverse effects on human beings, directly or indirectly?* ***Less Than Significant Impact.***

As discussed in the respective sections, the proposed project would have no potentially significant impacts. Therefore, impacts related to adverse effects on human beings would be less than significant.

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Written correspondence from Gracie Johnson, Integrated Waste Field Inspector, City of San Bernardino provided on April 26, 2016.

Written correspondence from Ted Brunson, Associate Engineer, San Bernardino Municipal Water Department provided on May 2, 2016.

APPENDIX A

Air Quality Assessment and Health Risk Screening Letter

AIR QUALITY ASSESSMENT

150K Distribution Center
City of San Bernardino, CA

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May 10, 2016

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LIST OF ACRONYMS

Air Quality Impact Assessments (AQIA)

Assembly Bill 32 (AB32)

California Air Resource Board (CARB)

California Ambient Air Quality Standards (CAAQS)

California Environmental Quality Act (CEQA)

Carbon Dioxide (CO2)

Cubic Yards (CY)

Diesel Particulate Matter (DPM)

Environmental Protection Agency (EPA)

EPA Office of Air Quality Planning and Standards (OAQPS)

Hazardous Air Pollutants (HAPs)

Hydrogen Sulfide (H2S)

International Residential Code (IRC)

Level of Service (LOS)

Low Carbon Fuel Standard (LCFS)

Methane (CH4)

National ambient air quality standards (NAAQS)

Nitrous Oxide (N2O)

Reactive Organic Gas (ROG)

Regional Air Quality Strategy (RAQS)

South Coast Air Basin (SCAB)

South Coast Air Quality Management District (SCAQMD)

Specific Plan Area (SPA)

State Implementation Plan (SIP)

Toxic Air Contaminants (TACs)

Vehicle Miles Traveled (VMT)

EXECUTIVE SUMMARY

This air quality impact study has been completed to determine air quality compliance with the California Environmental Quality Act (CEQA). CEQA Air quality impacts are determined by comparing project related construction and operation air emissions with South Coast Air Quality Management District (SCAQMD) screening thresholds. Projects found to produce emissions less than allowed by the district would have a less than significant impact under CEQA.

The proposed development project site is located between Georgia Boulevard and Cajon Boulevard in the South Coast Air Basin (SCAB) within the City of San Bernardino. The project will construct a 153,010 square foot (SF) building for warehouse/distribution of which approximately 5,000 SF would be used for office space and will be built on 8.1 acre site. Construction of the project is expected to commence late 2016 or early 2017 and take around up to 12 months to complete.

During construction of the proposed Project, fugitive dust emissions will be expected during grading, heavy equipment usage, and from construction workers commuting to and from the site though would not exceed any city thresholds. Furthermore, the project emission was compared to both operational and construction LSTs and no impacts were found. Given this no mitigation requirements would be necessary. Finally, health risks at nearby residential receptors were analyzed with respect to onsite diesel emissions from construction and no impacts would be expected. It should be noted, the project would utilize Tier IV diesel equipment as a design feature to this project. Given this, the diesel project construction equipment greater than 50 horse power would be required to be rated Tier 4 or better based on EPA requirements and would be a condition of the project.

Additionally, emissions will be generated from both area and operational sources by the proposed Project which are the result of Project generated traffic, landscaping maintenance equipment, consumer products, and annual maintenance and painting to name a few though would not generate emissions in excess of SCAQMD screening thresholds. Therefore, implementation of additional mitigation measures are not required.

Finally, the proposed Project would not be expected to generate offensive odors and would therefore not impact any sensitive receptors. The proposed project would not generate or be exposed to offensive odors. Therefore no odor impacts would occur on or off-site.

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this Air Quality study is to determine potential air quality impacts (if any) that may be created by construction, area or operational emissions (short term or long term) from the proposed Project. Should impacts be determined, the intent of this study would be to recommend suitable mitigation measures to bring those impacts to a level that would be considered less than significant.

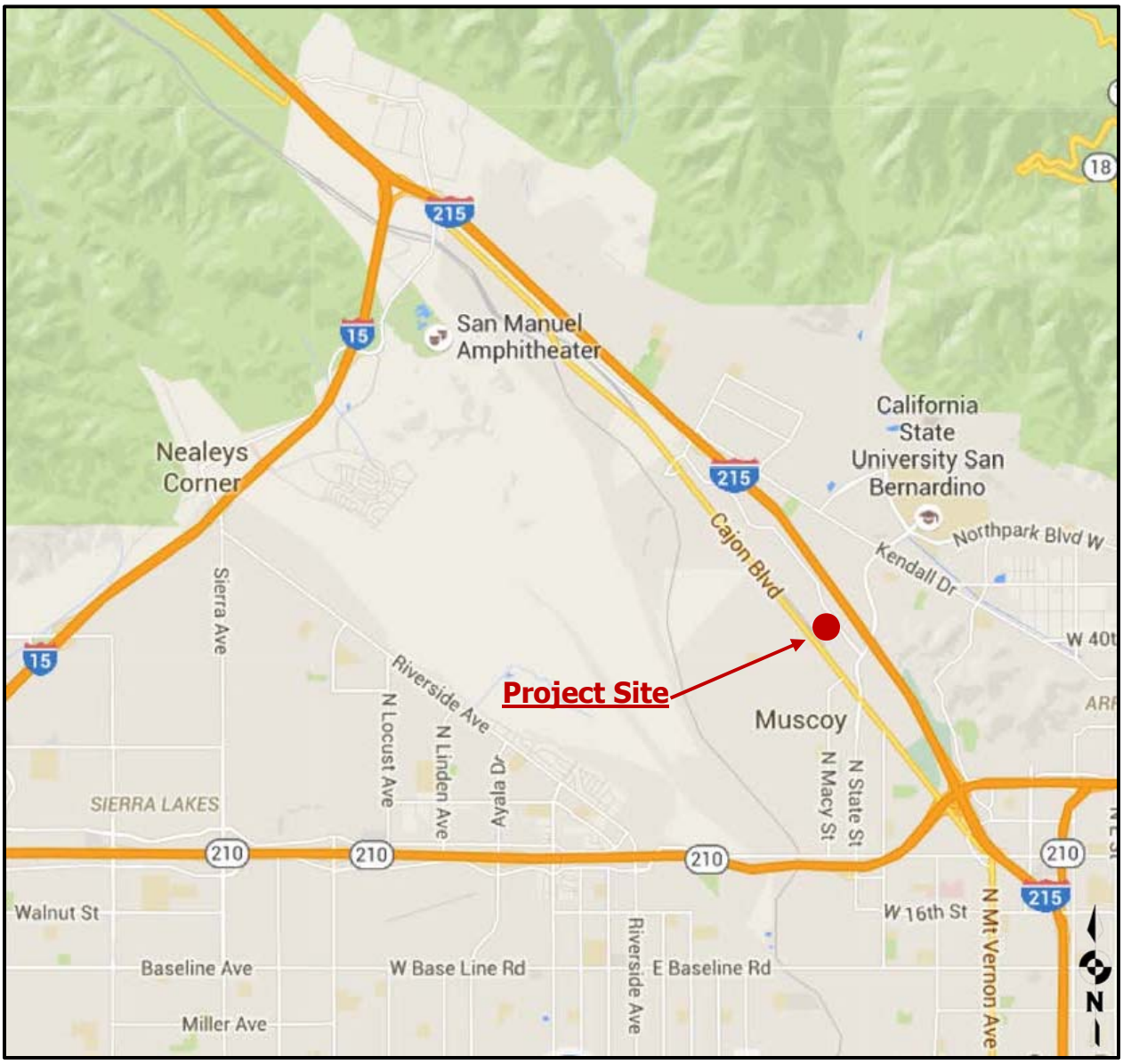
1.2 Project Location

The proposed Project site is located between Georgia Boulevard and Cajon Boulevard in the South Coast Air Basin (SCAB) within the City of San Bernardino. The nearest cross street to the project site is Saratoga Way and Georgia Boulevard. Access to the site is taken from driveways off of Georgia Boulevard. A general project vicinity map is shown in Figure 1–A on the following page.

1.3 Project Description

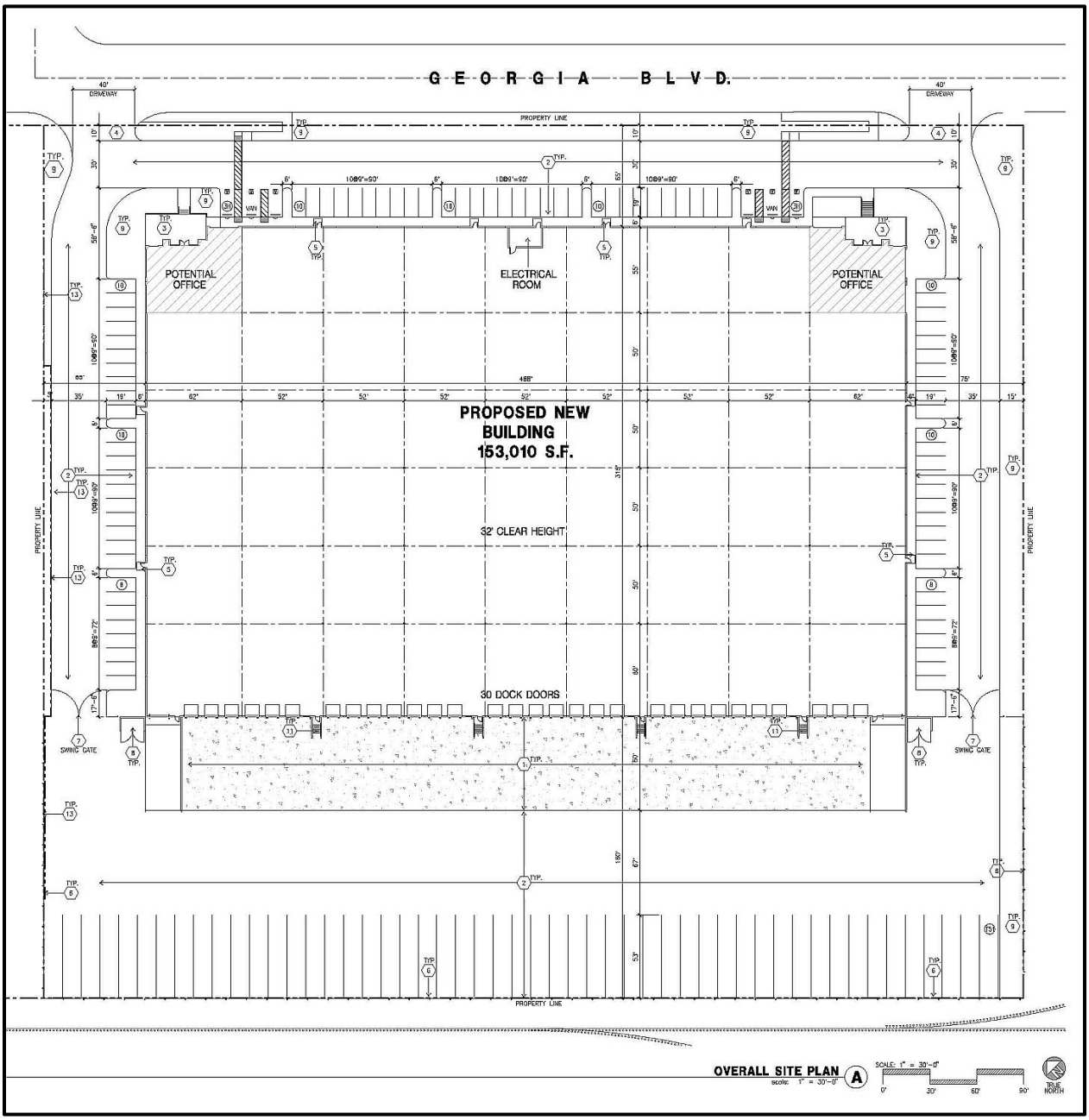
The project will construct a 153,010 square foot (SF) building for warehouse/distribution of which approximately 5,000 SF would be used for office space. The entire distribution warehouse facility will be located on an 8.1-acre site zoned light industrial. Grading is expected to start in January 2017 and full Build out could be as soon as late December of 2017. A site development plan is shown in Figure 1-B on Page 5 of this report.

Figure 1-A: Project Vicinity Map



Source: (Google, 2016)

Figure 1-B: Project Site Plan



Source: (HPA Architecture, 2016)

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Existing Setting

The existing project site area is generally represented by flat topography with elevations ranging from 1475 feet to 1485 feet above mean sea level. Land uses surrounding the project site is generally light industrial/warehouse uses. Also, adjacent land uses are similar to the proposed project.

2.2 Climate and Meteorology

Climate within the South Coast Air Basin (SCAB) area often varies dramatically over short geographical distances due to the size and topography. Most of southern California is dominated by high-pressure systems for much of the year, which keeps the City of San Bernardino mostly sunny and warm. Typically, during the winter months, the high pressure system drops to the south and brings cooler, moister weather from the north. It is common for inversion layers to develop within high-pressure areas, which mostly define pressure patterns over the SCAB. These inversions are caused when a thin layer of the atmosphere increases in temperature with height. An inversion acts like a lid preventing vertical mixing of air through convective overturning.

Daytime temperature highs within the City of San Bernardino typically range between 65 ºF in the winter to approximately 95 ºF in the summer with the month of August usually being the hottest month. Median temperatures range from approximately 52 ºF in the winter to approximately 79 ºF in the summer. The average humidity is approximately 62% in the winter and about 68% in the summer San Bernardino usually receives approximately 14.4 inches of rain per year with the month of February usually being the wettest month of the year (City-Data, 2016).

2.3 Regulatory Standards

2.3.1 Federal Standards and Definitions

The Federal Air Quality Standards were developed per the requirements of The Federal Clean Air Act, which is a federal law that was passed in 1970 and further amended in 1990. This law provides the basis for the national air pollution control effort. An important element of the act included the development of NAAQS for major air pollutants.

The Clean Air Act established two types of air quality standards otherwise known as primary and secondary standards. ***Primary Standards*** set limits for the intention of protecting

public health, which includes sensitive populations such as asthmatics, children and elderly. ***Secondary Standards*** set limits to protect public welfare to include the protection against decreased visibility, damage to animals, crops, vegetation and buildings.

The EPA Office of Air Quality Planning and Standards (OAQPS) has set National Ambient Air Quality Standards for principal pollutants, which are called "criteria" pollutants. These pollutants are defined below:

1. ***Carbon Monoxide (CO):*** *is a colorless, odorless, and tasteless gas and is produced from the partial combustion of carbon-containing compounds, notably in internal-combustion engines. Carbon monoxide usually forms when there is a reduced availability of oxygen present during the combustion process. Exposure to CO near the levels of the ambient air quality standards can lead to fatigue, headaches, confusion, and dizziness. CO interferes with the blood's ability to carry oxygen.*
2. ***Lead (Pb):*** *is a potent neurotoxin that accumulates in soft tissues and bone over time. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources but has been banned as an automotive gasoline additive since 1986. Because lead is only slowly excreted, exposures to small amounts of lead from a variety of sources can accumulate to harmful levels. Effects from inhalation of lead near the level of the ambient air quality standard include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms can include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children.*
3. ***Nitrogen Dioxide (NO_2):*** *is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract and is one of the nitrogen oxides emitted from high-temperature combustion, such as those occurring in trucks, cars, power plants, home heaters, and gas stoves. In the presence of other air contaminants, NO_2 is usually visible as a reddish-brown air layer over urban areas. NO_2 along with other traffic-related pollutants is associated with respiratory symptoms, respiratory illness and respiratory impairment. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO_2 above the level of the current state air quality standard. Clinical studies of human subjects suggest that NO_2 exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children.*
4. ***Particulate Matter (PM_{10} or $PM_{2.5}$):*** *is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary in shape, size and chemical composition, and can be made up of multiple materials such as metal, soot, soil, and dust. PM_{10} particles are 10 microns (µm) or less and $PM_{2.5}$ particles are 2.5 (µm) or less. These particles can contribute significantly to regional haze and reduction of visibility in California. Exposure to PM levels exceeding current air quality standards increases the risk of allergies such as asthma and respiratory illness.*

5. ***Ozone (O_3)**: is a highly oxidative unstable gas capable of damaging the linings of the respiratory tract. This pollutant forms in the atmosphere through reactions between chemicals directly emitted from vehicles, industrial plants, and many other sources. Exposure to ozone above ambient air quality standards can lead to human health effects such as lung inflammation, tissue damage and impaired lung functioning. Ozone can also damage materials such as rubber, fabrics and plastics.*
6. ***Sulfur Dioxide (SO_2)**: is a gaseous compound of sulfur and oxygen and is formed when sulfur-containing fuel is burned by mobile sources, such as locomotives, ships, and off-road diesel equipment. SO_2 is also emitted from several industrial processes, such as petroleum refining and metal processing. Effects from SO_2 exposures at levels near the one-hour standard include bronchoconstriction accompanied by symptoms, which may include wheezing, shortness of breath and chest tightness, especially during exercise or physical activity. Children, the elderly, and people with asthma, cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most susceptible to these symptoms. Continued exposure at elevated levels of SO_2 results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality.*

2.3.2 State Standards and Definitions

The State of California Air Resources Board (ARB) sets the laws and regulations for air quality on the state level. CAAQS are either the same as or more restrictive then the NAAQS and also restrict four additional contaminants. Table 2.1 on the following page identifies both the NAAQS and CAAQS. The additional contaminants as regulated by the CAAQS are defined below:

1. ***Visibility Reducing Particles**: Particles in the Air that obstruct the visibility.*
2. ***Sulfates**: are salts of Sulfuric Acid. Sulfates occur as microscopic particles (aerosols) resulting from fossil fuel and biomass combustion. They increase the acidity of the atmosphere and form acid rain.*
3. ***Hydrogen Sulfide (H_2S)**: is a colorless, toxic and flammable gas with a recognizable smell of rotten eggs or flatulence. H_2S occurs naturally in crude petroleum, natural gas, volcanic gases, and hot springs. Usually, H_2S is formed from bacterial breakdown of organic matter. Exposure to low concentrations of hydrogen sulfide may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Brief exposures to high concentrations of hydrogen sulfide (greater than 500 ppm) can cause a loss of consciousness and possibly death.*
4. ***Vinyl Chloride**: also known as chloroethene and is a toxic, carcinogenic, colorless gas with a sweet odor. It is an industrial chemical mainly used to produce its polymer, polyvinyl chloride (PVC).*

Table 2.1: Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	**Average Time**	**California Standards[1]**		**Federal Standards[2]**		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m3)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m3)		0.070 ppm (137 µg/m3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m3	Gravimetric or Beta Attenuation	150 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m3		-		
Fine Particulate Matter (PM2.5)[9]	24 Hour	No Separate State Standard		35 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m3	Gravimetric or Beta Attenuation	12.0 µg/m3	15 µg/m3	
Carbon Monoxide (CO)	8 hour	9.0 ppm (10mg/m3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m3)	-	Non-Dispersive Infrared Photometry
	1 hour	20 ppm (23 mg/m3)		35 ppm (40 mg/m3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m3)		-	-	-
Nitrogen Dioxide (NO_2)[10]	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m3)[8]	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m3)		0.100 ppm[8] (188/ µg/m3)	-	
Sulfur Dioxide (SO_2)[11]	Annual Arithmetic Mean	-	Ultraviolet Fluorescence	0.030 ppm[10] (for Certain Areas)	-	Ultraviolet Flourescence; Spectrophotometry (Pararoosaniline Method)[9]
	24 Hour	0.04 ppm (105 µg/m3)		0.14 ppm[10] (for Certain Areas) (See Footnote 9)	-	
	3 Hour	-		-	0.5 ppm (1300 µg/m3)	
	1 Hour	0.25 ppm (655 µg/m3)		75 ppb (196 µg/m3)	-	
Lead[12,13]	30 Day Average	1.5 µg/m3	Atomic Absorption	-		-
	Calendar Quarter	-		1.5 µg/m3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average	-		0.15 µg/m3		
Visibility Reducing Particles	8 Hour	See footnote 13				
Sulfates	24 Hour	25 µg/m3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m3)	Gas Chromatography			

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.
8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12.0 µg/m3 . The existing national 24- hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3 , as was the annual secondary standard of 15 µg/m3 . The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: (California Air Resources Board, 10/1/15)

2.3.3 Regional Standards

The State of California has 35 specific air districts, which are each responsible for ensuring that the criteria pollutants are below the NAAQS and CAAQS. Air basins that exceed either the NAAQS or the CAAQS for any criteria pollutants for designated periods defined in the footnote of Table 2.1 above are designated as "non-attainment areas" for that pollutant. Currently, there are 15 non-attainment areas for the federal ozone standard and two non-attainment areas for the PM2.5 standard. The state therefore created the California State Implementation Plan (SIP), which is designed to provide control measures needed for California Air basins to attain ambient air quality standards.

The project lies within the SCAB. The SCAQMD is the government agency, which regulates sources of air pollution within the County of Riverside. A complete listing of the current attainment status by pollutants for the SCAB is shown on Table 2.2 below.

Table 2.2: South Coast Air Basin Attainment Status by Pollutant

South Coast Air Basin Attainment Status by Pollutant			
Pollutant	***Average Time***	***California Standards***	***Federal Standards***
Ozone (O_3)	1 Hour	Non-attainment	No Federal Standard
	8 Hour		Extreme Non-attainment
Respirable Particulate Matter (PM10)	Annual Arithmetic Mean	Non-attainment	No Federal Standard
	24 Hour	Non-attainment	Attainment
	Annual Arithmetic Mean	Non-attainment	No Federal Standard[2]
Fine Particulate Matter PM2.5	24 Hour	No State Standard	Non-attainment
	Annual Arithmetic Mean	Non-attainment	Non-attainment
Carbon Monoxide (CO)	8 hour	Attainment	Maintenance Area[3]
	1 hour		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	Non-attainment	Maintenance Area[3]
	1 Hour	Non-attainment	Attainment
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	No State Standard	Attainment
	24 Hour	Attainment	Attainment
	1 Hour	Attainment	No Federal Standard
Lead	30 Day Average	Attainment	No Federal Standard
	Calendar Quarter	No State Standard	Attainment
Visibility Reducing Particles	8 Hour (10AM to 6PM, PST)	Unclassified	No Federal Standard
Sulfates	24 Hour	Attainment	No Federal Standard
Hydrogen Sulfide	1 Hour	Unclassified	No Federal Standard

1. Data reflects status as the year 2009.
2. The federal annual standards were removed by EPA in December 2006.
3. Maintenance Area (defined by U.S. Department of Transportation) is any geographic region of the United States previously designated nonattainment pursuant to the CAA Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under section 175A of the CAA, as amended.

2.4 California Environmental Quality Act (CEQA) Significance Thresholds

The California Environmental Quality Act has provided a checklist to identify the significance of air quality impacts. These guidelines are found in Appendix G of the CEQA guidelines and are as follows:

Air Quality -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:

A: Conflict with or obstruct implementation of the SCAQMD AQMP or applicable portions of the State Implementation Plan (SIP)?

B: Result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation?

C: Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or State ambient air quality standard (PM10, PM2.5 or exceed quantitative thresholds for O3 precursors, oxides of nitrogen [NOX] and Volatile Organic Compounds [VOCs])?

D: Expose sensitive receptors (including, but not limited to, schools, hospitals, resident care facilities, or day-care centers) to substantial pollutant concentrations?

E: Create objectionable odors affecting a substantial number of people?

2.5 Air Quality Impact Assessment Screening Thresholds

To determine whether a project would create potential air quality impacts, the City of San Bernardino uses South Coast Air Quality Management District's (SQAQMD) Air Quality Thresholds. The screening thresholds for construction and daily operations are shown in Table 2.3 on the following page.

The U.S. Environmental Protection Agency (U.S. EPA) uses the term Volatile Organic Compounds (VOC) and the California Air Resources Board's (CARB's) Emission Inventory Branch (EIB) uses the term Reactive Organic Gases (ROG) to essentially define the same thing. There are minor deviations between compounds that define each term however for purposes of this study we will assume they are essentially the same due to the fact SCAQMD interchanges these words and because CALLEEMOD 2013.2.2 directly calculates ROG in place of VOC.

Table 2.3: Screening Threshold for Criteria Pollutants

Pollutant	Total Emissions (Pounds per Day)
Construction Emissions	
Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)	150 and 55
Nitrogen Oxide (NO_x)	100
Sulfur Oxide (SO_x)	150
Carbon Monoxide (CO)	550
Volatile Organic Compounds (VOCs)	75
Operational Emissions	
Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)	150 and 55
Nitrogen Oxide (NO_x)	55
Sulfur Oxide (SO_x)	150
Carbon Monoxide (CO)	550
Lead and Lead Compounds	3.2
Volatile Organic Compounds (VOCs)	55

2.6 Local Air Quality

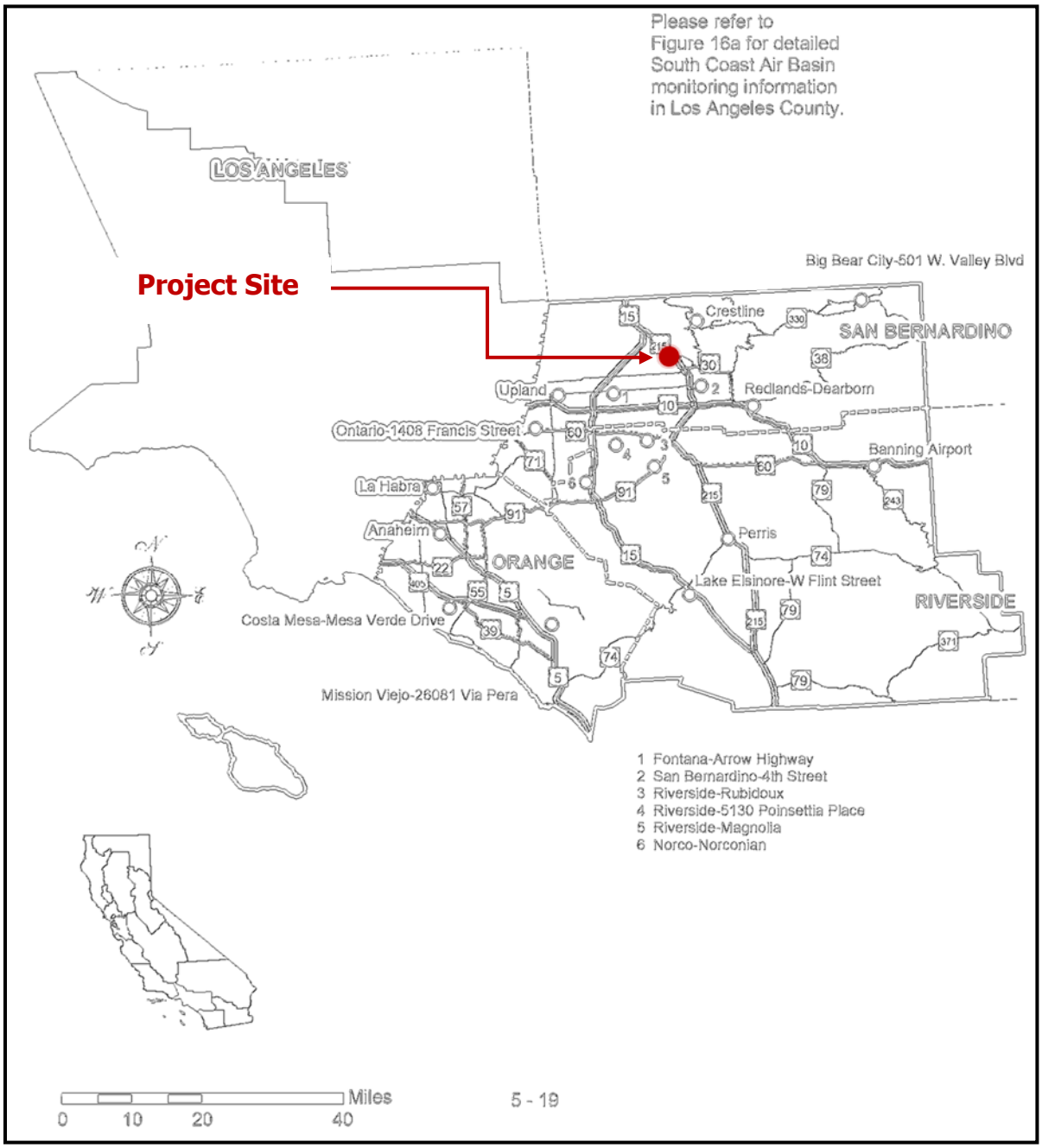
Criteria pollutants are measured continuously throughout the SCAB. This data is used to track ambient air quality patterns throughout the County. As mentioned earlier, this data is also used to determine attainment status when compared to the NAAQS and CAAQS.

Ambient Data was obtained from the California Environmental Protection Agency's Air Resources Board Website (California Air Resources Board, 2015). Table 2.4 on the following page identifies the closest criteria pollutants monitored to the project as well as identifies the relative distance to the project site. The proposed development project is closest to the monitoring stations located at San Bernardino 4th Street station as is shown within Figure 2-A on Page 14 of this report.

Table 2.4: Three-Year Ambient Air Quality Summary near the Project Site

Pollutant	Closest Recorded Ambient Monitoring Site	Averaging Time	CAAQS	NAAQS	2013	2014	2015
O_3 (ppm)	San Bernardino – 4th Street	1 Hour	0.09 ppm	-	0.139	0.121	0.134
		8 Hour	0.070 ppm	0.075 ppm	0.112	0.099	0.117
PM_{10} (µg/m3)		24 Hour	50 µg/m3	150 µg/m3	87.1	305.8	-
		Annual Arithmetic Mean	20 µg/m3	-	24.8	27.7	-
$PM_{2.5}$ (µg/m3)		24 Hour	-	35 µg/m3	55.3	73.9	53.5
NO_2 (ppm)		Annual Arithmetic Mean	0.030 ppm	0.053 ppm	-	0.018	0.015
		1 Hour	0.18 ppm	-	0.0721	0.0726	0.0714

Figure 2-A: Ambient Air Quality Monitoring Stations within SCAB – CARB



(California Energy Commission, 2014)

2.7 Localized Significance Thresholds

In June 2003 South Coast Air Quality Management District (SCAQMD) proposed a methodology for calculating Localized Significance Thresholds (LSTs) for NO_2, CO, $PM_{2.5}$ and PM_{10}. The LST methodology was developed to be used as a tool to assist lead agencies to analyze localized impacts associated with project-specific level proposed projects and would not be applicable to regional projects such as general plans. The LST methodology was last updated to incorporate the most recent ambient air quality standards (South Coast Air Quality Management District, 2008). The LST methodology is often utilized by most agencies governed under SCAQMD CEQA review which would include the County of Riverside.

SCAQMD developed mass rate look-up tables for projects less than five acres to assist agencies with development of LSTs, however LST guidelines recommend project specific air quality dispersion modeling for projects greater than five acres (South Coast Air Quality Management District, 2014). Air dispersion modeling utilizing AERMOD Version 15181 which replaced ISCS3 as the preferred dispersion modeling. The software has the ability to incorporate meteorological inputs as well as multiple source and receptor locations and is now used throughout the world.

Per the requirements of SCAQMDs LSTs methodology, emissions for gases in attainment such as NO_2 and CO are calculated by adding emission impacts from the project development to the peak background ambient NO_2 and CO concentrations and comparing the total concentration to the most stringent ambient air quality standards. Also, according to SCAQMD Rule 403, emissions for non-attainment particulate matter such as PM 10 and PM 2.5 can produce no more than 10.4 $\mu g/m^3$. It should be noted that the area around the project site is no longer monitored for CO, therefore, CO LSTs will not be analyzed.

3.0 METHODOLOGY

3.1 Construction Emissions Calculations

Air Quality impacts related to construction and daily operations were calculated using the latest CalEEMod air quality model, which was developed by ENVIRON International Corporation for South Coast Air Quality Management District (SCAQMD) in 2013. The construction module in CalEEMod is used to calculate the emissions associated with the construction of the project and uses methodologies presented in the US EPA AP-42 document with emphasis on Chapter 11.9. The CalEEMod input/output model is shown in Attachment A to this report.

The SCREEN3 dispersion model will be used to determine the concentration for air pollutants at any location near the pollutant generator. Additionally, the model will predict the maximum exposure distance and concentrations. The SCREEN3 input/output file for the proposed project is shown in Attachment B at the end of this report. The worst case exhaust emissions generated from the Project from construction equipment was utilized and calculated within the CalEEMod model.

Once the dispersed concentrations of diesel particulates are estimated in the surrounding air, they are used to evaluate estimated exposure to people. Exposure is evaluated by calculating the dose in milligrams per kilogram body weight per day (mg/kg/d). For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. The following algorithms calculate this dose for exposure through the inhalation pathways. The worst case cancer risk dose calculation is defined in Equation 1 below (OEHHA, February 2015):

Equation 1 $$Dose_{air}=C_{air}*(BR/BW)*A*EF*(1x10^{-6})$$

$Dose_{air}$	=	Dose through inhalation (mg/kg/d)
C_{air}	=	Concentration in air (µg/m3) Annual average DPM concentration in µg/m3 -SCREEN3 predicts a 1-hr concentration and is corrected to an annual average by multiplying the 1-hr average by 0.08 (US EPA, 1992)
BR/BW	=	Daily breathing rate normalized to body weight (L/kg BW-day). See Table I.2 for the daily breathing rate for each age range.
A	=	Inhalation absorption factor (assumed to be 1)
EF	=	Exposure frequency (unitless, days/365 days)
1x10-6	=	Milligrams to micrograms conversion (10^{-3} mg/ µg), cubic meters to liters conversion (10^{-3} m^3/l)

Once the dose is determined then you must calculate the cancer risk. The average daily inhalation dose (mg/kg-day) multiplied by the cancer potency factor $(mg/kg\text{-}day)^{-1}$ will give

the inhalation cancer risk (unitless), which is an expression of the chemical's cancer risk during a 70-year lifespan of exposure. For example, an inhalation cancer risk of 5 x 10-6 is the same as stating that an individual has an estimated probability of developing cancer from their exposure of 5 chances per million people exposed.

Cancer risk is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor, the frequency of time spent at home and the exposure duration divided by averaging time, to yield the excess cancer risk. As described below, the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk for any given location. Specific factors as modeled are shown within the project models attached to this report. The worst case cancer risk calculation is defined in Equation 2 below (OEHHA, February 2015):

Equation 2

$$RISKinh\text{-}res = DOSEair \times CPF \times ASF \times ED/AT \times FAH$$

RISKinh-res	=	Residential inhalation cancer risk
DOSEair	=	Daily inhalation dose (mg/kg-day)
CPF	=	Inhalation cancer potency factor ($mg/kg\text{-}day^{-1}$)
ASF	=	Age sensitivity factor for a specified age group (unitless)
ED	=	Exposure duration (in years) for a specified age group
AT	=	Averaging time for lifetime cancer risk (years)
FAH	=	Fraction of time spent at home (unitless)

OEHHA recommends that an exposure duration (residency time) of 30 years be used to estimate individual cancer risk for the Maximally Exposed Individual Resident (MEIR). OEHHA also recommends that the 30-year exposure duration be used as the basis for public notification and risk reduction audits and plans.

Exposure durations of 9-years and 70-years are also recommended to be evaluated for the MEIR to show the range of cancer risk based on residency periods. If a facility is notifying the public regarding cancer risk, the 9-and 70-year cancer risk estimates are useful for people who have resided in their current residence for periods shorter and longer than 30 years.

3.2 Localized Threshold Construction Impacts

Utilizing the AERMOD dispersion model, project level air quality emissions for NO_x, CO and PM_{10} emissions were calculated utilizing an area source over the project site. A concentric system of receptors was utilized for receivers to represent some of the residential uses surrounding the project site.

LST concentrations for PM_{10} is 10.4 µg/m^3 however, to derive LST concentrations for NO_2 and CO, the difference between the ambient air quality standard and the ambient concentration for the pollutant must be determined. The following equation is used:

$$C_{pc} = C_{AAQS} - C_b$$

Where: C_{PC} = Project contribution emission levels in micrograms per cubic meter; and
C_b = Background Concentration measured at the closest air quality monitoring station in micrograms per cubic meter; and
C_{AAQS} = is the limiting state or federal standards in micrograms per cubic meter.

Ambient Air Quality thresholds are not given for NOx as is typically quantified for project related emission outputs. This is because NOx emitted during the combustion process primarily consists of NO and NO_2. Initially it is assumed that 5% of NOx is NO2 and the remaining NO gradually is converted to NO_2 through photochemical and reactions with ozone O3 (Source: A Chemically Reactive Plume Model for the NO-NO2-O3 System - Atmospheric Environment 24A – Arellano, J.V., A.M. Talmon, and P.J.H Builtjes). It was found that the downwind conversion from NO to NO2 is quantified through the NO2/NOx ratio calculated from the emission release point. The reduction ratios are shown in Table 3.1 below.

Table 3.1: Three-Year Ambient Air Quality Summary near the Project Site

Downwind Distance (m)	NO2/NOx Ratio
20	0.053
50	0.059
70	0.064
100	0.074
200	0.114
500	0.258
1000	0.467
2000	0.75
3000	0.9
4000	0.978
5000	1.0

Source: A Chemically Reactive Plume Model for the NO-NO2-O3 System - Atmospheric Environment 24A – Arellano, J.V., A.M. Talmon, and P.J.H Builtjes

3.3 Construction Assumptions

The Project construction dates were estimated based on an estimated construction kickoff starting in early 2017. Construction of the entire project would take approximately 12 months. Table 3.2 shows the expected timeframes for the construction processes as well as the expected number of pieces of equipment to complete the project.

Table 3.2: Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Finish	Quantity
Site Preparation	1/1/2017	1/7/2017	
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			3
Grading	1/8/2017	2/1/2017	
Excavators			1
Graders			1
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			3
Paving	2/2/2017	2/20/2017	
Pavers			2
Paving Equipment			2
Rollers			2
Building Construction	2/21/2017	12/31/2017	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Architectural Coating	6/1/2017	12/31/2017	
Air Compressors			1
This equipment list is based upon equipment inventory within CALLEEMOD 2013.2.2. The quantity and types are based upon discussions with the project applicant.			

3.4 Operational Emissions

Once construction is completed the proposed project would generate emissions from daily operations which would include sources such as Area, Energy, Mobile, Waste and Water uses, which are also calculated within CalEEMod. Area Sources include consumer products, landscaping and architectural coatings as part of regular maintenance. Energy sources

would be from uses such as electricity and natural gas. Finally, mobile or transportation related emissions are calculated in CalEEMod through the use of EMFAC2011 and is based on standard trip generation rates encoded into the model. The operational model is also included in CalEEMod ***Attachments A*** at the end of this report.

In the EMFAC model, the emission rates are multiplied with vehicle activity data provided by the regional transportation agencies to calculate the statewide or regional emission inventories. An emission inventory is based on the emission rate (e.g., grams per pollutant emitted over a mile) and vehicle activity (e.g., miles driven per day). Area sources originate from daily onsite uses, which require either burning fuel to generate energy (i.e. natural gas fireplaces, gas furnaces, gas water heaters and small engines) or the evaporation of organic gases such as from paints (architectural coatings).

The CalEEMod model estimates emission predictions for ROG, NO_x, CO, SO_2, PM_{10} and $PM_{2.5}$ for area source assumptions. For this analysis, it is assumed that Natural Gas is available onsite. Additionally, it was assumed that 10% of the structural surface area will be re-painted each year and that no fireplaces will be installed onsite.

Consumer product emissions are generated by a wide range of product categories, including air fresheners, automotive products, household cleaners, and personal care products. Emissions associated with these products primarily depend on the increased population associated with residential development but would minimally increase for commercial and industrial uses.

3.5 Odor Impacts (Onsite)

Potential onsite odor generators would include short term construction odors from activities such as paving and possibly painting. The construction odors would be considered short term and would not be considered an impact. Given this the Project will not have a potential to create offensive odors and would therefore not be considered an impact under CEQA.

4.0 FINDINGS

4.1 Construction Findings

The Project construction dates were estimated based on an estimated construction kickoff starting in January 2017. Construction of the entire project would take approximately 12 months. As a design feature of this project, only Tier IV diesel equipment will be utilized and would be a condition of this project. A summary of the construction emissions is shown in Table 4.1 below.

Table 4.1: Expected Construction Emissions Summary

Year	ROG	NO_x	CO	SO_2	PM_{10} (Dust)	PM_{10} (Exhaust)	PM_{10} (Total)	$PM_{2.5}$ (Dust)	$PM_{2.5}$ (Exhaust)	$PM_{2.5}$ (Total)
2017 (lb/day) Unmitigated	11.08	51.83	40.31	0.04	18.72	2.76	21.47	10.03	2.54	12.57
SQAQMD Significance Threshold (lb/day)	75	100	550	150	-	-	150	-	-	55
Exceeds SCAQMD Screening Threshold	**No**	**No**	**No**	**No**	**-**	**-**	**No**	**-**	**-**	**No**

Based on these findings, construction emissions would not exceed SQAQMD air quality standards. Therefore, construction mitigation would not be required to meet SCAQMD standards and the project would be compatible with CEQA.

4.2 Localized Significance Thresholds for Construction

SCAQMD also recommend using LST methodology which incorporates background ambient air quality data. LDN consulting utilized the ISCST3 dispersion model for these calculations to determine project level emissions for NO_x, CO and PM_{10}. Emissions were calculated utilizing multiple point sources over the project site. Total construction emissions were used as taken from CalEEMod and were normalized to the corresponding averaging time used by CAAQS methodology. An offset group of receptors were used consisting of concentric points outwards at 20, 25, 50, 100, 200 and 500 meters were used. Finally, Tier IV equipment was assumed as this equipment would be implemented as a design feature to this project.

Based upon the CalEEMod air quality modeling as shown in CalEEMod annual outputs, worst-case NO_x and PM_{10} would cumulatively produce 0.411 and 0.0787 tons respectively over the construction duration of 260-days. The average rate over the project area is 0.0497 and 0.0094 grams per second or 1.52e-6 and 2.88e-7 for each pollutant during the construction day and was modeled as such within AERMOD (***Attachments B and – C***). Furthermore, emission output plots are shown in Figures 4-A and –B starting on the following page.

Based on these calculations, it was found that the project would not contribute emissions in significant quantities to exceed the LST and would not require any additional mitigation measures to comply. Table 4.2 below shows the unmitigated results from AERMOD.

Table 4.2: AERMOD Modeling Results during construction (Unmitigated)

Pollutant	Averaging Time	Threshold	Worst Case Background Ambient Air Quality Data		LST (µg/m3)	Project Contribution (µg/m3)					Sig.?
			Data	(µg/m3)		25 (m)	50 (m)	100 (m)	200 (m)	500 (m)	
PM_{10}	24 Hour	10.4 µg/m3	305.8 µg/m^3	305.8	10.4	8	7	5	1.8	0.5	No
NO_2 (Corrected utilizing NO_2/NOx Ratio)	1 Hour	0.18 ppm (339 µg/m^3)	0.073 ppm	137.48	201.52	7.10	7.08	8.14	11.40	9.29	No

Figure 4-A: PM_{10} – 24HR Maximum AERMOD Plot

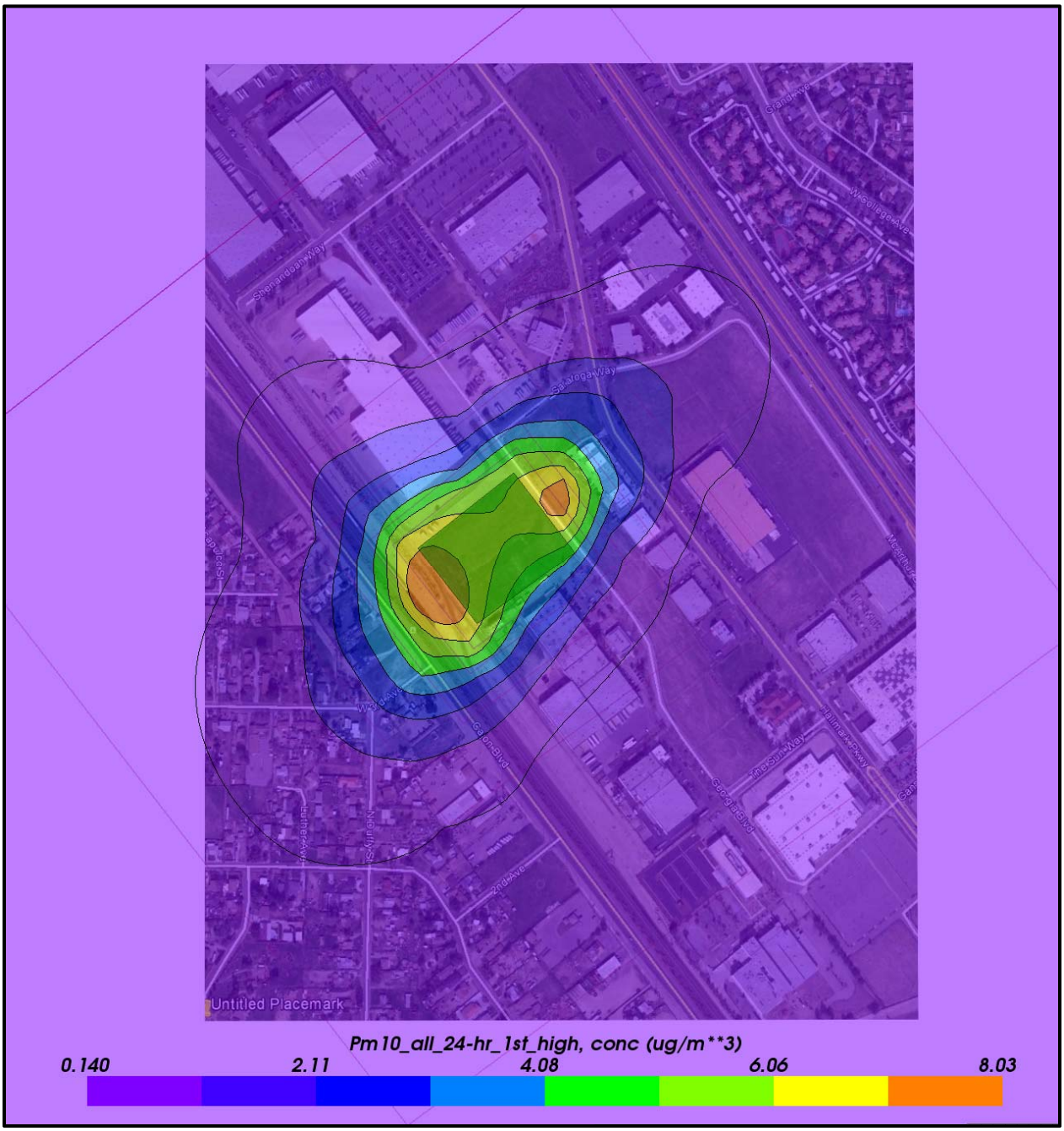
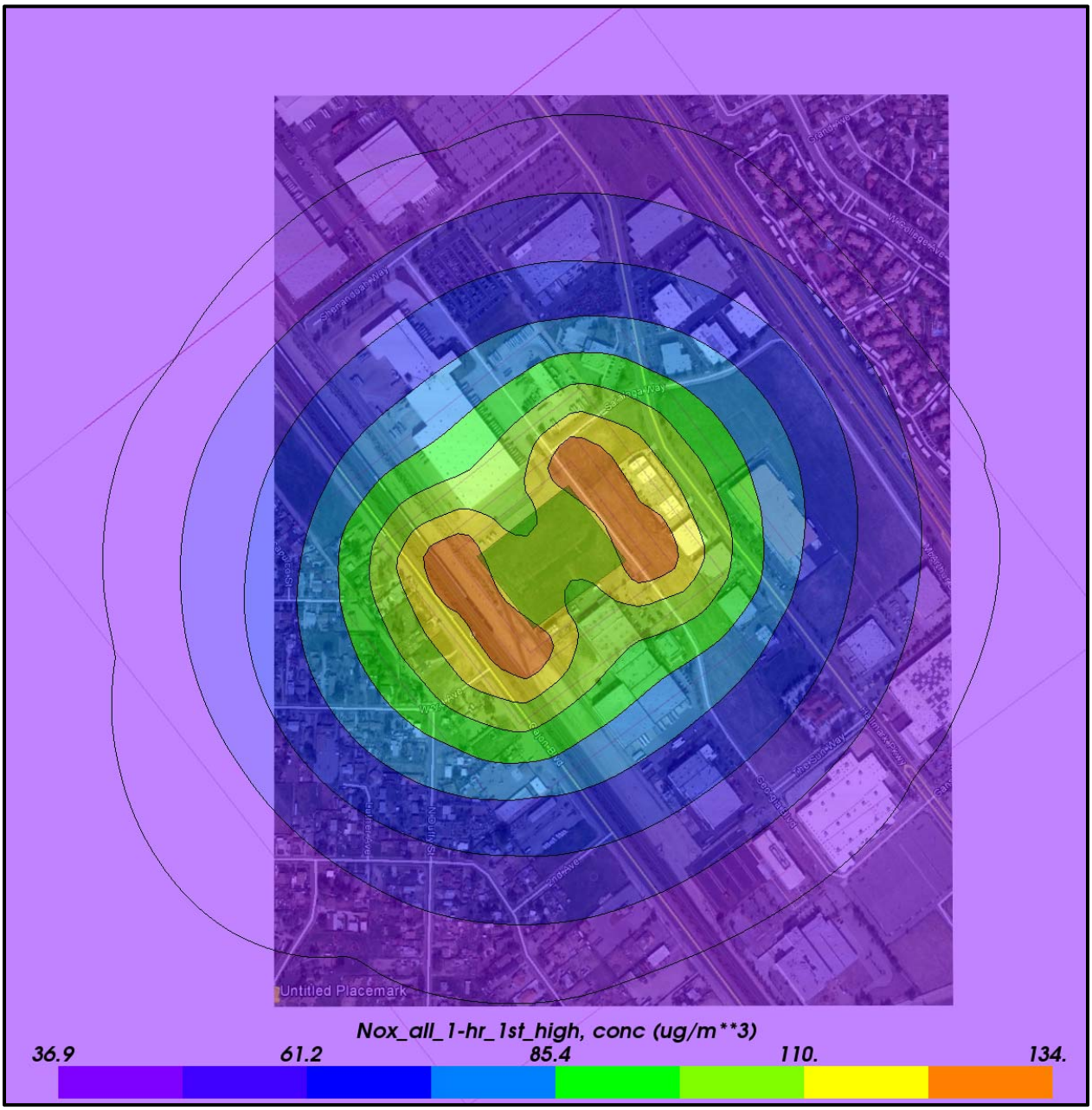


Figure 4-B: NOx – 1HR Maximum AERMOD Plot



4.3 Health Risk

Based upon the air quality modeling, worst-case onsite PM_{10} from onsite construction Tier IV exhaust would cumulatively produce 0.00188 tons over the construction duration (260-working days) or an average of 0.00023 grams/second.

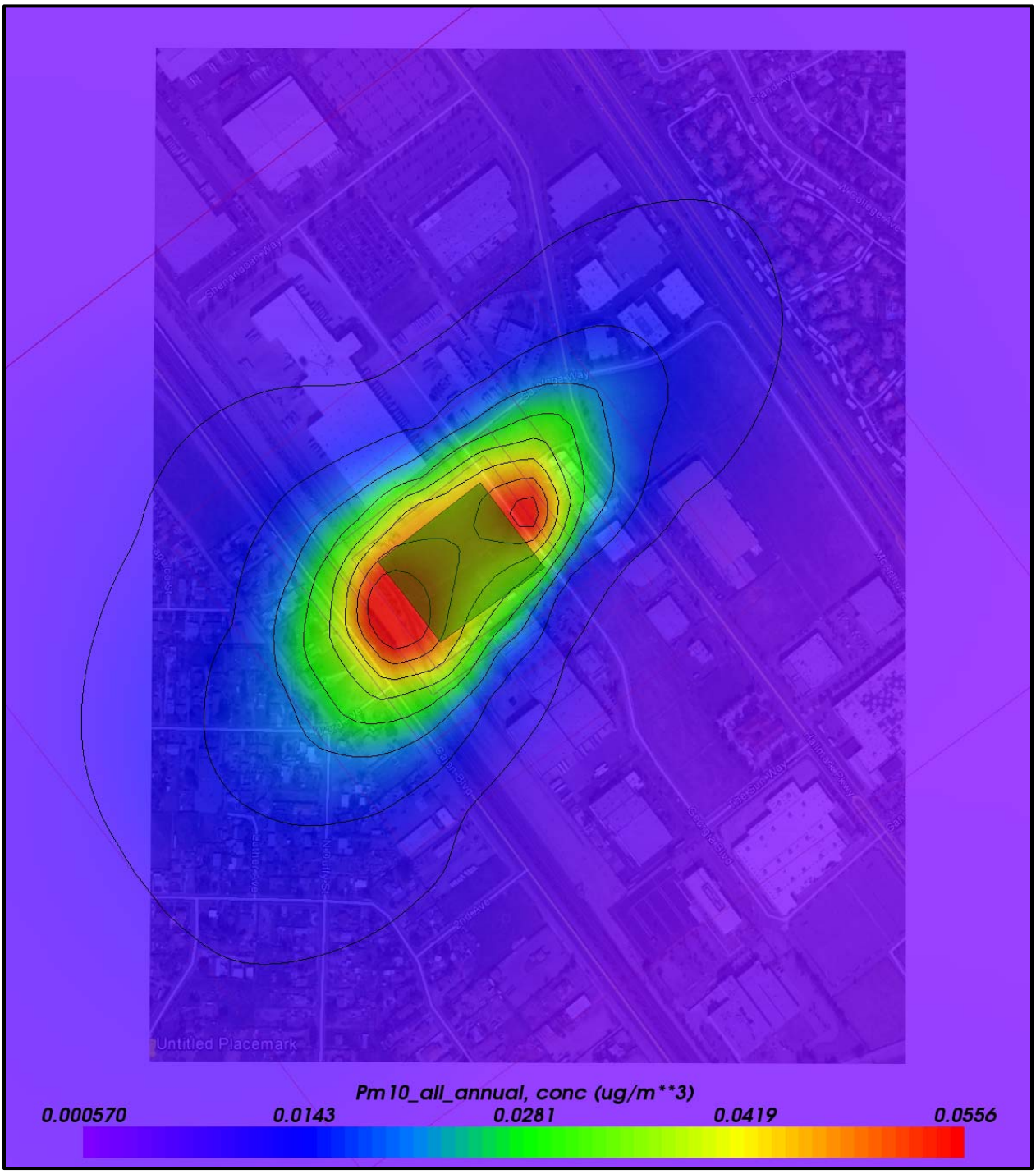
The average emission rate over the grading area is 6.94×10^{-9} g/m2/s, which was calculated as follows:

$$\frac{0.00023 \frac{grams}{second}}{8.1 acres * 4{,}046 \frac{meters^2}{acre}} = 6.94 * 10^{-9} \frac{\frac{grams}{meters^2}}{second}$$

Utilizing the AERMOD dispersion model, we find that the peak maximum 1-hr concentration is 0.056 µg/m^3 during the worst-case construction period but would not be at any residential receptors. The exposure to the nearest residential receptors would be 0.04 µg/m^3 as is shown visually below in Figure 4-C on the following page. Furthermore, the AERMOD calculations are shown in ***Attachment D*** to this report and. Therefore, utilizing the risk equation identified above in Section 3.1, the inhalation cancer risk is 8.49 at the nearest receptor. At this distance, the cancer risk would not exceed 10 in one million and would not be considered an impact. It should be noted that the latest standards are Tier IV equipment and have been assumed as part of this analysis. Given this, this equipment would be required. The cancer risk calculations are shown in ***Attachment E to*** this report.

Furthermore, based on discussions with the project applicant, no cumulative projects are identified within 500 meters from the project site which is the extent to which this project was modeled. Since emissions drop off to almost zero beyond this, cumulative impacts would not be expected.

Figure 4-C: PM_{10} Onsite Construction Exhaust – Annual AERMOD Plot



4.4 Operational Findings

The CALEEMOD 2013.2.2 Model was run for both the summer and winter scenarios assuming average temperatures.

The expected daily pollutant generation can be calculated utilizing the product of the average daily miles traveled and the expected emissions inventory calculated by CALEEMOD 2013.2.2 utilizing emissions from EMFAC2011. Based upon these calculations, operational air quality impacts are not expected. The daily operational pollutants calculated are shown in Table 4.3a and –b below for both summer and winter scenarios.

Table 4.3a: Operational Unmitigated - Summer Daily Pollutant Generation

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area Source Emission Estimates (Lb/Day)	4.00	0.00	0.02	0.00	0.00	0.00
Energy Emission Estimates (Lb/Day)	0.01	0.09	0.07	0.00	0.01	0.01
Mobile Emission Estimates (Lb/Day)	2.21	12.71	29.52	0.09	5.23	1.54
Total (Lb/Day)	**6.22**	**12.80**	**29.61**	**0.09**	**5.24**	**1.55**
SCAQMD Thresholds	55	55	550	150	150	55
Significant?	No	No	No	No	No	No
Daily pollutant generation assumes trip distances within CalEEMod						

Table 4.3b: Operational Unmitigated - Winter Daily Pollutant Generation

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area Source Emission Estimates (Lb/Day)	4.00	0.00	0.02	0.00	0.00	0.00
Energy Emission Estimates (Lb/Day)	0.01	0.09	0.07	0.00	0.01	0.01
Mobile Emission Estimates (Lb/Day)	2.17	13.21	28.24	0.08	5.23	1.54
Total (Lb/Day)	**6.18**	**13.30**	**28.33**	**0.08**	**5.24**	**1.55**
SCAQMD Thresholds	55	55	550	150	150	55
Significant?	No	No	No	No	No	No
Daily pollutant generation assumes trip distances within CalEEMod						

4.5 Odor Impact Findings

Odor impacts from construction operations would be considered short term events and would not be considered an impact. Long term operations will not create offensive odors and would not create any operational odor impacts.

4.6 Conclusion of Findings

During construction of the proposed Project, fugitive dust emissions will be expected during grading, heavy equipment usage, and from construction workers commuting to and from the site though would not exceed any city thresholds. Furthermore, the project emission was compared to both operational and construction LSTs and no impacts were found. Given this no mitigation requirements would be necessary. Finally, health risks at nearby residential receptors were analyzed with respect to onsite diesel emissions from construction and no impacts would be expected. It should be noted, the project would utilize Tier IV diesel equipment as a design feature to this project. Given this, the diesel project construction equipment greater than 50 horse power would be required to be rated Tier 4 or better based on EPA requirements and would be a condition of the project.

Additionally, emissions will be generated from both area and operational sources by the proposed Project which are the result of Project generated traffic, landscaping maintenance equipment, consumer products, and annual maintenance and painting to name a few though would not generate emissions in excess of SCAQMD screening thresholds. Therefore, implementation of additional mitigation measures are not required.

Finally, the proposed Project would not be expected to generate offensive odors and would therefore not impact any sensitive receptors. The proposed project would not generate or be exposed to offensive odors. Therefore no odor impacts would occur on or off-site.

5.0 REFERENCES

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ATTACHMENT A

CALLEEMOD 2013.2.2

153K Distribution Center

San Bernardino-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	153.00	1000sqft	8.10	153,010.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site is 8.1 Acres

Construction Phase - PS

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - cl

Grading - 8.1AC

Architectural Coating -

Vehicle Trips - 3.56 drips per ksf per traffic study

Vechicle Emission Factors - adjusted to match Project trip types identified in traffic study 80.3% PV, 19.87% trucks

Vechicle Emission Factors - adjusted to match Project trip types identified in traffic study 80.3% PV, 19.87% trucks

Area Coating -

Vechicle Emission Factors - adjusted to match Project trip types identified in traffic study 80.3% PV, 19.87% trucks

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	152.00
tblConstructionPhase	NumDays	230.00	224.00
tblConstructionPhase	NumDays	20.00	18.00
tblConstructionPhase	NumDays	20.00	13.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	PhaseEndDate	7/31/2018	12/31/2017
tblConstructionPhase	PhaseEndDate	12/29/2017	12/31/2017
tblConstructionPhase	PhaseEndDate	1/6/2017	1/7/2017
tblConstructionPhase	PhaseStartDate	1/1/2018	6/1/2017
tblGrading	AcresOfGrading	9.00	8.10
tblGrading	AcresOfGrading	0.00	8.10

tblLandUse	LandUseSquareFeet	153,000.00	153,010.00
tblLandUse	LotAcreage	3.51	8.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblSolidWaste	SolidWasteGenerationRate	143.82	141.74
tblTripsAndVMT	WorkerTripNumber	64.00	63.00
tblVehicleEF	HHD	0.04	0.10
tblVehicleEF	HHD	0.04	0.10
tblVehicleEF	HHD	0.04	0.10
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDT1	0.07	0.06
tblVehicleEF	LDT1	0.07	0.06
tblVehicleEF	LDT1	0.07	0.06
tblVehicleEF	LDT2	0.17	0.14
tblVehicleEF	LDT2	0.17	0.14
tblVehicleEF	LDT2	0.17	0.14
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD2	9.0500e-003	0.03
tblVehicleEF	LHD2	9.0500e-003	0.03
tblVehicleEF	LHD2	9.0500e-003	0.03
tblVehicleEF	MCY	4.9650e-003	1.0000e-003
tblVehicleEF	MCY	4.9650e-003	1.0000e-003
tblVehicleEF	MCY	4.9650e-003	1.0000e-003

tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MH	2.9440e-003	1.0000e-003
tblVehicleEF	MH	2.9440e-003	1.0000e-003
tblVehicleEF	MH	2.9440e-003	1.0000e-003
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	OBUS	1.1190e-003	1.0000e-003
tblVehicleEF	OBUS	1.1190e-003	1.0000e-003
tblVehicleEF	OBUS	1.1190e-003	1.0000e-003
tblVehicleEF	SBUS	7.0000e-004	1.0000e-003
tblVehicleEF	SBUS	7.0000e-004	1.0000e-003
tblVehicleEF	SBUS	7.0000e-004	1.0000e-003
tblVehicleEF	UBUS	1.3370e-003	1.0000e-003
tblVehicleEF	UBUS	1.3370e-003	1.0000e-003
tblVehicleEF	UBUS	1.3370e-003	1.0000e-003
tblVehicleTrips	ST_TR	2.59	3.56
tblVehicleTrips	SU_TR	2.59	3.56
tblVehicleTrips	WD_TR	2.59	3.56
tblWater	IndoorWaterUseRate	35,381,250.00	34,870,187.50

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	27.2499	36.0528	27.0532	0.0459	7.8519	2.0400	9.1523	3.5254	1.8816	5.2830	0.0000	4,310.0895	4,310.0895	0.9406	0.0000	4,329.8411
Total	**27.2499**	**36.0528**	**27.0532**	**0.0459**	**7.8519**	**2.0400**	**9.1523**	**3.5254**	**1.8816**	**5.2830**	**0.0000**	**4,310.0895**	**4,310.0895**	**0.9406**	**0.0000**	**4,329.8411**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	27.2499	36.0528	27.0532	0.0459	7.8519	2.0400	9.1523	3.5254	1.8816	5.2830	0.0000	4,310.0895	4,310.0895	0.9406	0.0000	4,329.8411
Total	**27.2499**	**36.0528**	**27.0532**	**0.0459**	**7.8519**	**2.0400**	**9.1523**	**3.5254**	**1.8816**	**5.2830**	**0.0000**	**4,310.0895**	**4,310.0895**	**0.9406**	**0.0000**	**4,329.8411**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0026	1.5000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0335	0.0335	9.0000e-005		0.0354
Energy	9.6700e-003	0.0880	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5411	105.5411	2.0200e-003	1.9300e-003	106.1835
Mobile	2.2104	12.7114	29.5236	0.0867	5.0276	0.2052	5.2327	1.3508	0.1888	1.5396		7,425.7712	7,425.7712	0.2002		7,429.9755
Total	**6.2227**	**12.7995**	**29.6133**	**0.0872**	**5.0276**	**0.2119**	**5.2395**	**1.3508**	**0.1956**	**1.5464**		**7,531.3458**	**7,531.3458**	**0.2023**	**1.9300e-003**	**7,536.1943**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0026	1.5000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0335	0.0335	9.0000e-005		0.0354
Energy	9.6700e-003	0.0880	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5411	105.5411	2.0200e-003	1.9300e-003	106.1835
Mobile	2.2104	12.7114	29.5236	0.0867	5.0276	0.2052	5.2327	1.3508	0.1888	1.5396		7,425.7712	7,425.7712	0.2002		7,429.9755
Total	**6.2227**	**12.7995**	**29.6133**	**0.0872**	**5.0276**	**0.2119**	**5.2395**	**1.3508**	**0.1956**	**1.5464**		**7,531.3458**	**7,531.3458**	**0.2023**	**1.9300e-003**	**7,536.1943**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2017	1/7/2017	5	5	
2	Grading	Grading	1/8/2017	2/1/2017	5	18	
3	Paving	Paving	2/2/2017	2/20/2017	5	13	
4	Building Construction	Building Construction	2/21/2017	12/31/2017	5	224	
5	Architectural Coating	Architectural Coating	6/1/2017	12/31/2017	5	152	

Acres of Grading (Site Preparation Phase): 8.1

Acres of Grading (Grading Phase): 8.1

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 229,515; Non-Residential Outdoor: 76,505 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	63.00	25.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7401	0.0000	7.7401	3.4957	0.0000	3.4957			0.0000			0.0000
Off-Road	2.1407	22.3243	17.1221	0.0182		1.2996	1.2996		1.1956	1.1956		1,864.8035	1,864.8035	0.5714		1,876.8024
Total	**2.1407**	**22.3243**	**17.1221**	**0.0182**	**7.7401**	**1.2996**	**9.0397**	**3.4957**	**1.1956**	**4.6914**		**1,864.8035**	**1,864.8035**	**0.5714**		**1,876.8024**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0382	0.0469	0.6188	1.4100e-003	0.1118	8.0000e-004	0.1126	0.0296	7.4000e-004	0.0304		112.1977	112.1977	5.3200e-003		112.3094
Total	**0.0382**	**0.0469**	**0.6188**	**1.4100e-003**	**0.1118**	**8.0000e-004**	**0.1126**	**0.0296**	**7.4000e-004**	**0.0304**		**112.1977**	**112.1977**	**5.3200e-003**		**112.3094**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7401	0.0000	7.7401	3.4957	0.0000	3.4957			0.0000			0.0000
Off-Road	2.1407	22.3243	17.1221	0.0182		1.2996	1.2996		1.1956	1.1956	0.0000	1,864.8035	1,864.8035	0.5714		1,876.8024
Total	**2.1407**	**22.3243**	**17.1221**	**0.0182**	**7.7401**	**1.2996**	**9.0397**	**3.4957**	**1.1956**	**4.6914**	**0.0000**	**1,864.8035**	**1,864.8035**	**0.5714**		**1,876.8024**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0382	0.0469	0.6188	1.4100e-003	0.1118	8.0000e-004	0.1126	0.0296	7.4000e-004	0.0304		112.1977	112.1977	5.3200e-003		112.3094
Total	**0.0382**	**0.0469**	**0.6188**	**1.4100e-003**	**0.1118**	**8.0000e-004**	**0.1126**	**0.0296**	**7.4000e-004**	**0.0304**		**112.1977**	**112.1977**	**5.3200e-003**		**112.3094**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4993	0.0000	6.4993	3.3618	0.0000	3.3618			0.0000			0.0000
Off-Road	3.4555	35.9825	25.3812	0.0297		2.0388	2.0388		1.8757	1.8757		3,043.6667	3,043.6667	0.9326		3,063.2507
Total	**3.4555**	**35.9825**	**25.3812**	**0.0297**	**6.4993**	**2.0388**	**8.5381**	**3.3618**	**1.8757**	**5.2375**		**3,043.6667**	**3,043.6667**	**0.9326**		**3,063.2507**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0573	0.0703	0.9281	2.1100e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		168.2965	168.2965	7.9800e-003		168.4640
Total	**0.0573**	**0.0703**	**0.9281**	**2.1100e-003**	**0.1677**	**1.2000e-003**	**0.1689**	**0.0445**	**1.1000e-003**	**0.0456**		**168.2965**	**168.2965**	**7.9800e-003**		**168.4640**

3.3 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4993	0.0000	6.4993	3.3618	0.0000	3.3618			0.0000			0.0000
Off-Road	3.4555	35.9825	25.3812	0.0297		2.0388	2.0388		1.8757	1.8757	0.0000	3,043.6667	3,043.6667	0.9326		3,063.2507
Total	**3.4555**	**35.9825**	**25.3812**	**0.0297**	**6.4993**	**2.0388**	**8.5381**	**3.3618**	**1.8757**	**5.2375**	**0.0000**	**3,043.6667**	**3,043.6667**	**0.9326**		**3,063.2507**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0573	0.0703	0.9281	2.1100e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		168.2965	168.2965	7.9800e-003		168.4640
Total	**0.0573**	**0.0703**	**0.9281**	**2.1100e-003**	**0.1677**	**1.2000e-003**	**0.1689**	**0.0445**	**1.1000e-003**	**0.0456**		**168.2965**	**168.2965**	**7.9800e-003**		**168.4640**

3.4 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9074**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**		**2,281.0588**	**2,281.0588**	**0.6989**		**2,295.7360**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0573	0.0703	0.9281	2.1100e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		168.2965	168.2965	7.9800e-003		168.4640
Total	**0.0573**	**0.0703**	**0.9281**	**2.1100e-003**	**0.1677**	**1.2000e-003**	**0.1689**	**0.0445**	**1.1000e-003**	**0.0456**		**168.2965**	**168.2965**	**7.9800e-003**		**168.4640**

3.4 Paving - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9074**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**	**0.0000**	**2,281.0588**	**2,281.0588**	**0.6989**		**2,295.7360**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0573	0.0703	0.9281	2.1100e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		168.2965	168.2965	7.9800e-003		168.4640
Total	**0.0573**	**0.0703**	**0.9281**	**2.1100e-003**	**0.1677**	**1.2000e-003**	**0.1689**	**0.0445**	**1.1000e-003**	**0.0456**		**168.2965**	**168.2965**	**7.9800e-003**		**168.4640**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1957	1.9854	2.3535	5.4300e-003	0.1571	0.0322	0.1893	0.0449	0.0297	0.0745		536.1340	536.1340	3.7900e-003		536.2136
Worker	0.2408	0.2953	3.8981	8.8500e-003	0.7042	5.0300e-003	0.7092	0.1868	4.6400e-003	0.1914		706.8452	706.8452	0.0335		707.5489
Total	**0.4365**	**2.2807**	**6.2516**	**0.0143**	**0.8613**	**0.0373**	**0.8985**	**0.2316**	**0.0343**	**0.2659**		**1,242.9792**	**1,242.9792**	**0.0373**		**1,243.7625**

3.5 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1957	1.9854	2.3535	5.4300e-003	0.1571	0.0322	0.1893	0.0449	0.0297	0.0745		536.1340	536.1340	3.7900e-003		536.2136
Worker	0.2408	0.2953	3.8981	8.8500e-003	0.7042	5.0300e-003	0.7092	0.1868	4.6400e-003	0.1914		706.8452	706.8452	0.0335		707.5489
Total	**0.4365**	**2.2807**	**6.2516**	**0.0143**	**0.8613**	**0.0373**	**0.8985**	**0.2316**	**0.0343**	**0.2659**		**1,242.9792**	**1,242.9792**	**0.0373**		**1,243.7625**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	23.3290					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**23.6613**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0497	0.0609	0.8044	1.8300e-003	0.1453	1.0400e-003	0.1464	0.0385	9.6000e-004	0.0395		145.8570	145.8570	6.9100e-003		146.0022
Total	**0.0497**	**0.0609**	**0.8044**	**1.8300e-003**	**0.1453**	**1.0400e-003**	**0.1464**	**0.0385**	**9.6000e-004**	**0.0395**		**145.8570**	**145.8570**	**6.9100e-003**		**146.0022**

3.6 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	23.3290					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**23.6613**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0497	0.0609	0.8044	1.8300e-003	0.1453	1.0400e-003	0.1464	0.0385	9.6000e-004	0.0395		145.8570	145.8570	6.9100e-003		146.0022
Total	**0.0497**	**0.0609**	**0.8044**	**1.8300e-003**	**0.1453**	**1.0400e-003**	**0.1464**	**0.0385**	**9.6000e-004**	**0.0395**		**145.8570**	**145.8570**	**6.9100e-003**		**146.0022**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.2104	12.7114	29.5236	0.0867	5.0276	0.2052	5.2327	1.3508	0.1888	1.5396		7,425.7712	7,425.7712	0.2002		7,429.9755
Unmitigated	2.2104	12.7114	29.5236	0.0867	5.0276	0.2052	5.2327	1.3508	0.1888	1.5396		7,425.7712	7,425.7712	0.2002		7,429.9755

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	544.68	544.68	544.68	2,334,344	2,334,344
Total	544.68	544.68	544.68	2,334,344	2,334,344

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.470000	0.060000	0.140000	0.130000	0.025000	0.025000	0.045000	0.100000	0.001000	0.001000	0.001000	0.001000	0.001000

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	9.6700e-003	0.0880	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5411	105.5411	2.0200e-003	1.9300e-003	106.1835
NaturalGas Unmitigated	9.6700e-003	0.0880	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5411	105.5411	2.0200e-003	1.9300e-003	106.1835

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	897.1	9.6700e-003	0.0880	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5411	105.5411	2.0200e-003	1.9300e-003	106.1835
Total		**9.6700e-003**	**0.0880**	**0.0739**	**5.3000e-004**		**6.6800e-003**	**6.6800e-003**		**6.6800e-003**	**6.6800e-003**		**105.5411**	**105.5411**	**2.0200e-003**	**1.9300e-003**	**106.1835**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.8971	9.6700e-003	0.0880	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5411	105.5411	2.0200e-003	1.9300e-003	106.1835
Total		**9.6700e-003**	**0.0880**	**0.0739**	**5.3000e-004**		**6.6800e-003**	**6.6800e-003**		**6.6800e-003**	**6.6800e-003**		**105.5411**	**105.5411**	**2.0200e-003**	**1.9300e-003**	**106.1835**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0026	1.5000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0335	0.0335	9.0000e-005		0.0354
Unmitigated	4.0026	1.5000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0335	0.0335	9.0000e-005		0.0354

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9715					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.0296					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5100e-003	1.5000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0335	0.0335	9.0000e-005		0.0354
Total	**4.0026**	**1.5000e-004**	**0.0158**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0335**	**0.0335**	**9.0000e-005**		**0.0354**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9715					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.0296					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5100e-003	1.5000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0335	0.0335	9.0000e-005		0.0354
Total	**4.0026**	**1.5000e-004**	**0.0158**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0335**	**0.0335**	**9.0000e-005**		**0.0354**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

153K Distribution Center

San Bernardino-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	153.00	1000sqft	8.10	153,010.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site is 8.1 Acres

Construction Phase - PS

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - cl

Grading - 8.1AC

Architectural Coating -

Vehicle Trips - 3.56 drips per ksf per traffic study

Vechicle Emission Factors - adjusted to match Project trip types identified in traffic study 80.3% PV, 19.87% trucks

Vechicle Emission Factors - adjusted to match Project trip types identified in traffic study 80.3% PV, 19.87% trucks

Area Coating -

Vechicle Emission Factors - adjusted to match Project trip types identified in traffic study 80.3% PV, 19.87% trucks

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	152.00
tblConstructionPhase	NumDays	230.00	224.00
tblConstructionPhase	NumDays	20.00	18.00
tblConstructionPhase	NumDays	20.00	13.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	PhaseEndDate	7/31/2018	12/31/2017
tblConstructionPhase	PhaseEndDate	12/29/2017	12/31/2017
tblConstructionPhase	PhaseEndDate	1/6/2017	1/7/2017
tblConstructionPhase	PhaseStartDate	1/1/2018	6/1/2017
tblGrading	AcresOfGrading	9.00	8.10
tblGrading	AcresOfGrading	0.00	8.10

tblLandUse	LandUseSquareFeet	153,000.00	153,010.00
tblLandUse	LotAcreage	3.51	8.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblSolidWaste	SolidWasteGenerationRate	143.82	141.74
tblTripsAndVMT	WorkerTripNumber	64.00	63.00
tblVehicleEF	HHD	0.04	0.10
tblVehicleEF	HHD	0.04	0.10
tblVehicleEF	HHD	0.04	0.10
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDT1	0.07	0.06
tblVehicleEF	LDT1	0.07	0.06
tblVehicleEF	LDT1	0.07	0.06
tblVehicleEF	LDT2	0.17	0.14
tblVehicleEF	LDT2	0.17	0.14
tblVehicleEF	LDT2	0.17	0.14
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD2	9.0500e-003	0.03
tblVehicleEF	LHD2	9.0500e-003	0.03
tblVehicleEF	LHD2	9.0500e-003	0.03
tblVehicleEF	MCY	4.9650e-003	1.0000e-003
tblVehicleEF	MCY	4.9650e-003	1.0000e-003
tblVehicleEF	MCY	4.9650e-003	1.0000e-003

tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MH	2.9440e-003	1.0000e-003
tblVehicleEF	MH	2.9440e-003	1.0000e-003
tblVehicleEF	MH	2.9440e-003	1.0000e-003
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	OBUS	1.1190e-003	1.0000e-003
tblVehicleEF	OBUS	1.1190e-003	1.0000e-003
tblVehicleEF	OBUS	1.1190e-003	1.0000e-003
tblVehicleEF	SBUS	7.0000e-004	1.0000e-003
tblVehicleEF	SBUS	7.0000e-004	1.0000e-003
tblVehicleEF	SBUS	7.0000e-004	1.0000e-003
tblVehicleEF	UBUS	1.3370e-003	1.0000e-003
tblVehicleEF	UBUS	1.3370e-003	1.0000e-003
tblVehicleEF	UBUS	1.3370e-003	1.0000e-003
tblVehicleTrips	ST_TR	2.59	3.56
tblVehicleTrips	SU_TR	2.59	3.56
tblVehicleTrips	WD_TR	2.59	3.56
tblWater	IndoorWaterUseRate	35,381,250.00	34,870,187.50

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	27.2436	36.0575	26.7277	0.0449	7.8519	2.0400	9.1523	3.5254	1.8818	5.2830	0.0000	4,229.4966	4,229.4966	0.9406	0.0000	4,249.2482
Total	**27.2436**	**36.0575**	**26.7277**	**0.0449**	**7.8519**	**2.0400**	**9.1523**	**3.5254**	**1.8818**	**5.2830**	**0.0000**	**4,229.4966**	**4,229.4966**	**0.9406**	**0.0000**	**4,249.2482**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	27.2436	36.0575	26.7277	0.0449	7.8519	2.0400	9.1523	3.5254	1.8818	5.2830	0.0000	4,229.4966	4,229.4966	0.9406	0.0000	4,249.2482
Total	**27.2436**	**36.0575**	**26.7277**	**0.0449**	**7.8519**	**2.0400**	**9.1523**	**3.5254**	**1.8818**	**5.2830**	**0.0000**	**4,229.4966**	**4,229.4966**	**0.9406**	**0.0000**	**4,249.2482**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0026	1.5000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0335	0.0335	9.0000e-005		0.0354
Energy	9.6700e-003	0.0880	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5411	105.5411	2.0200e-003	1.9300e-003	106.1835
Mobile	2.1712	13.2095	28.2368	0.0819	5.0276	0.2060	5.2336	1.3508	0.1896	1.5404		7,051.7129	7,051.7129	0.2007		7,055.9270
Total	**6.1835**	**13.2976**	**28.3265**	**0.0824**	**5.0276**	**0.2127**	**5.2403**	**1.3508**	**0.1963**	**1.5471**		**7,157.2875**	**7,157.2875**	**0.2028**	**1.9300e-003**	**7,162.1458**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0026	1.5000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0335	0.0335	9.0000e-005		0.0354
Energy	9.6700e-003	0.0880	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5411	105.5411	2.0200e-003	1.9300e-003	106.1835
Mobile	2.1712	13.2095	28.2368	0.0819	5.0276	0.2060	5.2336	1.3508	0.1896	1.5404		7,051.7129	7,051.7129	0.2007		7,055.9270
Total	**6.1835**	**13.2976**	**28.3265**	**0.0824**	**5.0276**	**0.2127**	**5.2403**	**1.3508**	**0.1963**	**1.5471**		**7,157.2875**	**7,157.2875**	**0.2028**	**1.9300e-003**	**7,162.1458**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2017	1/7/2017	5	5	
2	Grading	Grading	1/8/2017	2/1/2017	5	18	
3	Paving	Paving	2/2/2017	2/20/2017	5	13	
4	Building Construction	Building Construction	2/21/2017	12/31/2017	5	224	
5	Architectural Coating	Architectural Coating	6/1/2017	12/31/2017	5	152	

Acres of Grading (Site Preparation Phase): 8.1

Acres of Grading (Grading Phase): 8.1

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 229,515; Non-Residential Outdoor: 76,505 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	63.00	25.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7401	0.0000	7.7401	3.4957	0.0000	3.4957			0.0000			0.0000
Off-Road	2.1407	22.3243	17.1221	0.0182		1.2996	1.2996		1.1956	1.1956		1,864.8035	1,864.8035	0.5714		1,876.8024
Total	**2.1407**	**22.3243**	**17.1221**	**0.0182**	**7.7401**	**1.2996**	**9.0397**	**3.4957**	**1.1956**	**4.6914**		**1,864.8035**	**1,864.8035**	**0.5714**		**1,876.8024**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0358	0.0500	0.5276	1.2800e-003	0.1118	8.0000e-004	0.1126	0.0296	7.4000e-004	0.0304		102.1865	102.1865	5.3200e-003		102.2982
Total	**0.0358**	**0.0500**	**0.5276**	**1.2800e-003**	**0.1118**	**8.0000e-004**	**0.1126**	**0.0296**	**7.4000e-004**	**0.0304**		**102.1865**	**102.1865**	**5.3200e-003**		**102.2982**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7401	0.0000	7.7401	3.4957	0.0000	3.4957			0.0000			0.0000
Off-Road	2.1407	22.3243	17.1221	0.0182		1.2996	1.2996		1.1956	1.1956	0.0000	1,864.8035	1,864.8035	0.5714		1,876.8024
Total	**2.1407**	**22.3243**	**17.1221**	**0.0182**	**7.7401**	**1.2996**	**9.0397**	**3.4957**	**1.1956**	**4.6914**	**0.0000**	**1,864.8035**	**1,864.8035**	**0.5714**		**1,876.8024**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0358	0.0500	0.5276	1.2800e-003	0.1118	8.0000e-004	0.1126	0.0296	7.4000e-004	0.0304		102.1865	102.1865	5.3200e-003		102.2982
Total	**0.0358**	**0.0500**	**0.5276**	**1.2800e-003**	**0.1118**	**8.0000e-004**	**0.1126**	**0.0296**	**7.4000e-004**	**0.0304**		**102.1865**	**102.1865**	**5.3200e-003**		**102.2982**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4993	0.0000	6.4993	3.3618	0.0000	3.3618			0.0000			0.0000
Off-Road	3.4555	35.9825	25.3812	0.0297		2.0388	2.0388		1.8757	1.8757		3,043.6667	3,043.6667	0.9326		3,063.2507
Total	**3.4555**	**35.9825**	**25.3812**	**0.0297**	**6.4993**	**2.0388**	**8.5381**	**3.3618**	**1.8757**	**5.2375**		**3,043.6667**	**3,043.6667**	**0.9326**		**3,063.2507**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0537	0.0751	0.7914	1.9200e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		153.2798	153.2798	7.9800e-003		153.4473
Total	**0.0537**	**0.0751**	**0.7914**	**1.9200e-003**	**0.1677**	**1.2000e-003**	**0.1689**	**0.0445**	**1.1000e-003**	**0.0456**		**153.2798**	**153.2798**	**7.9800e-003**		**153.4473**

3.3 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4993	0.0000	6.4993	3.3618	0.0000	3.3618			0.0000			0.0000
Off-Road	3.4555	35.9825	25.3812	0.0297		2.0388	2.0388		1.8757	1.8757	0.0000	3,043.6667	3,043.6667	0.9326		3,063.2507
Total	**3.4555**	**35.9825**	**25.3812**	**0.0297**	**6.4993**	**2.0388**	**8.5381**	**3.3618**	**1.8757**	**5.2375**	**0.0000**	**3,043.6667**	**3,043.6667**	**0.9326**		**3,063.2507**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0537	0.0751	0.7914	1.9200e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		153.2798	153.2798	7.9800e-003		153.4473
Total	**0.0537**	**0.0751**	**0.7914**	**1.9200e-003**	**0.1677**	**1.2000e-003**	**0.1689**	**0.0445**	**1.1000e-003**	**0.0456**		**153.2798**	**153.2798**	**7.9800e-003**		**153.4473**

3.4 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9074**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**		**2,281.0588**	**2,281.0588**	**0.6989**		**2,295.7360**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0537	0.0751	0.7914	1.9200e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		153.2798	153.2798	7.9800e-003		153.4473
Total	**0.0537**	**0.0751**	**0.7914**	**1.9200e-003**	**0.1677**	**1.2000e-003**	**0.1689**	**0.0445**	**1.1000e-003**	**0.0456**		**153.2798**	**153.2798**	**7.9800e-003**		**153.4473**

3.4 Paving - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9074**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**	**0.0000**	**2,281.0588**	**2,281.0588**	**0.6989**		**2,295.7360**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0537	0.0751	0.7914	1.9200e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		153.2798	153.2798	7.9800e-003		153.4473
Total	**0.0537**	**0.0751**	**0.7914**	**1.9200e-003**	**0.1677**	**1.2000e-003**	**0.1689**	**0.0445**	**1.1000e-003**	**0.0456**		**153.2798**	**153.2798**	**7.9800e-003**		**153.4473**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2081	2.0376	2.7210	5.3900e-003	0.1571	0.0326	0.1896	0.0449	0.0299	0.0748		531.6258	531.6258	3.9100e-003		531.7079
Worker	0.2254	0.3152	3.3237	8.0500e-003	0.7042	5.0300e-003	0.7092	0.1868	4.6400e-003	0.1914		643.7750	643.7750	0.0335		644.4787
Total	**0.4335**	**2.3529**	**6.0447**	**0.0134**	**0.8613**	**0.0376**	**0.8988**	**0.2316**	**0.0346**	**0.2662**		**1,175.4008**	**1,175.4008**	**0.0374**		**1,176.1865**

3.5 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2081	2.0376	2.7210	5.3900e-003	0.1571	0.0326	0.1896	0.0449	0.0299	0.0748		531.6258	531.6258	3.9100e-003		531.7079
Worker	0.2254	0.3152	3.3237	8.0500e-003	0.7042	5.0300e-003	0.7092	0.1868	4.6400e-003	0.1914		643.7750	643.7750	0.0335		644.4787
Total	**0.4335**	**2.3529**	**6.0447**	**0.0134**	**0.8613**	**0.0376**	**0.8988**	**0.2316**	**0.0346**	**0.2662**		**1,175.4008**	**1,175.4008**	**0.0374**		**1,176.1865**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	23.3290					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**23.6613**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0465	0.0651	0.6858	1.6600e-003	0.1453	1.0400e-003	0.1464	0.0385	9.6000e-004	0.0395		132.8425	132.8425	6.9100e-003		132.9877
Total	**0.0465**	**0.0651**	**0.6858**	**1.6600e-003**	**0.1453**	**1.0400e-003**	**0.1464**	**0.0385**	**9.6000e-004**	**0.0395**		**132.8425**	**132.8425**	**6.9100e-003**		**132.9877**

3.6 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	23.3290					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**23.6613**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0465	0.0651	0.6858	1.6600e-003	0.1453	1.0400e-003	0.1464	0.0385	9.6000e-004	0.0395		132.8425	132.8425	6.9100e-003		132.9877
Total	**0.0465**	**0.0651**	**0.6858**	**1.6600e-003**	**0.1453**	**1.0400e-003**	**0.1464**	**0.0385**	**9.6000e-004**	**0.0395**		**132.8425**	**132.8425**	**6.9100e-003**		**132.9877**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.1712	13.2095	28.2368	0.0819	5.0276	0.2060	5.2336	1.3508	0.1896	1.5404		7,051.7129	7,051.7129	0.2007		7,055.9270
Unmitigated	2.1712	13.2095	28.2368	0.0819	5.0276	0.2060	5.2336	1.3508	0.1896	1.5404		7,051.7129	7,051.7129	0.2007		7,055.9270

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	544.68	544.68	544.68	2,334,344	2,334,344
Total	544.68	544.68	544.68	2,334,344	2,334,344

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.470000	0.060000	0.140000	0.130000	0.025000	0.025000	0.045000	0.100000	0.001000	0.001000	0.001000	0.001000	0.001000

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	9.6700e-003	0.0880	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5411	105.5411	2.0200e-003	1.9300e-003	106.1835
NaturalGas Unmitigated	9.6700e-003	0.0880	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5411	105.5411	2.0200e-003	1.9300e-003	106.1835

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	897.1	9.6700e-003	0.0880	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5411	105.5411	2.0200e-003	1.9300e-003	106.1835
Total		**9.6700e-003**	**0.0880**	**0.0739**	**5.3000e-004**		**6.6800e-003**	**6.6800e-003**		**6.6800e-003**	**6.6800e-003**		**105.5411**	**105.5411**	**2.0200e-003**	**1.9300e-003**	**106.1835**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.8971	9.6700e-003	0.0880	0.0739	5.3000e-004		6.6800e-003	6.6800e-003		6.6800e-003	6.6800e-003		105.5411	105.5411	2.0200e-003	1.9300e-003	106.1835
Total		**9.6700e-003**	**0.0880**	**0.0739**	**5.3000e-004**		**6.6800e-003**	**6.6800e-003**		**6.6800e-003**	**6.6800e-003**		**105.5411**	**105.5411**	**2.0200e-003**	**1.9300e-003**	**106.1835**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0026	1.5000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0335	0.0335	9.0000e-005		0.0354
Unmitigated	4.0026	1.5000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0335	0.0335	9.0000e-005		0.0354

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9715					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.0296					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5100e-003	1.5000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0335	0.0335	9.0000e-005		0.0354
Total	**4.0026**	**1.5000e-004**	**0.0158**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0335**	**0.0335**	**9.0000e-005**		**0.0354**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9715					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.0296					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5100e-003	1.5000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0335	0.0335	9.0000e-005		0.0354
Total	**4.0026**	**1.5000e-004**	**0.0158**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0335**	**0.0335**	**9.0000e-005**		**0.0354**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

153K Distribution Center

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	153.00	1000sqft	8.10	153,010.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site is 8.1 Acres

Construction Phase - PS

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - cl

Grading - 8.1AC

Architectural Coating -

Vehicle Trips - 3.56 drips per ksf per traffic study

Vechicle Emission Factors - adjusted to match Project trip types identified in traffic study 80.3% PV, 19.87% trucks

Vechicle Emission Factors - adjusted to match Project trip types identified in traffic study 80.3% PV, 19.87% trucks

Vechicle Emission Factors - adjusted to match Project trip types identified in traffic study 80.3% PV, 19.87% trucks

Area Coating -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
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tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstructionPhase	NumDays	230.00	224.00

tblConstructionPhase	NumDays	20.00	18.00
tblConstructionPhase	NumDays	20.00	13.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	PhaseEndDate	7/31/2018	12/31/2017
tblConstructionPhase	PhaseEndDate	12/29/2017	12/31/2017
tblConstructionPhase	PhaseEndDate	1/6/2017	1/7/2017
tblConstructionPhase	PhaseStartDate	1/1/2018	6/1/2017
tblGrading	AcresOfGrading	9.00	8.10
tblGrading	AcresOfGrading	0.00	8.10
tblLandUse	LandUseSquareFeet	153,000.00	153,010.00
tblLandUse	LotAcreage	3.51	8.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblSolidWaste	SolidWasteGenerationRate	143.82	141.74
tblTripsAndVMT	WorkerTripNumber	64.00	63.00
tblVehicleEF	HHD	0.04	0.10
tblVehicleEF	HHD	0.04	0.10
tblVehicleEF	HHD	0.04	0.10
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDT1	0.07	0.06
tblVehicleEF	LDT1	0.07	0.06
tblVehicleEF	LDT1	0.07	0.06
tblVehicleEF	LDT2	0.17	0.14
tblVehicleEF	LDT2	0.17	0.14
tblVehicleEF	LDT2	0.17	0.14

tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD2	9.0500e-003	0.03
tblVehicleEF	LHD2	9.0500e-003	0.03
tblVehicleEF	LHD2	9.0500e-003	0.03
tblVehicleEF	MCY	4.9650e-003	1.0000e-003
tblVehicleEF	MCY	4.9650e-003	1.0000e-003
tblVehicleEF	MCY	4.9650e-003	1.0000e-003
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MH	2.9440e-003	1.0000e-003
tblVehicleEF	MH	2.9440e-003	1.0000e-003
tblVehicleEF	MH	2.9440e-003	1.0000e-003
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	OBUS	1.1190e-003	1.0000e-003
tblVehicleEF	OBUS	1.1190e-003	1.0000e-003
tblVehicleEF	OBUS	1.1190e-003	1.0000e-003
tblVehicleEF	SBUS	7.0000e-004	1.0000e-003
tblVehicleEF	SBUS	7.0000e-004	1.0000e-003
tblVehicleEF	SBUS	7.0000e-004	1.0000e-003
tblVehicleEF	UBUS	1.3370e-003	1.0000e-003
tblVehicleEF	UBUS	1.3370e-003	1.0000e-003
tblVehicleEF	UBUS	1.3370e-003	1.0000e-003
tblVehicleTrips	ST_TR	2.59	3.56

tblVehicleTrips	SU_TR	2.59	3.56
tblVehicleTrips	WD_TR	2.59	3.56
tblWater	IndoorWaterUseRate	35,381,250.00	34,870,187.50

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	2.2460	3.9109	3.3057	5.3700e-003	0.1862	0.2460	0.4321	0.0681	0.2312	0.2993	0.0000	462.5805	462.5805	0.0855	0.0000	464.3758
Total	**2.2460**	**3.9109**	**3.3057**	**5.3700e-003**	**0.1862**	**0.2460**	**0.4321**	**0.0681**	**0.2312**	**0.2993**	**0.0000**	**462.5805**	**462.5805**	**0.0855**	**0.0000**	**464.3758**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	1.8688	0.5595	3.1700	5.3700e-003	0.1862	5.1300e-003	0.1913	0.0681	4.7900e-003	0.0729	0.0000	462.5801	462.5801	0.0855	0.0000	464.3754
Total	**1.8688**	**0.5595**	**3.1700**	**5.3700e-003**	**0.1862**	**5.1300e-003**	**0.1913**	**0.0681**	**4.7900e-003**	**0.0729**	**0.0000**	**462.5801**	**462.5801**	**0.0855**	**0.0000**	**464.3754**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**16.79**	**85.69**	**4.11**	**0.00**	**0.00**	**97.91**	**55.73**	**0.00**	**97.93**	**75.64**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7304	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8000e-003	3.8000e-003	1.0000e-005	0.0000	4.0200e-003
Energy	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	149.7084	149.7084	6.4100e-003	1.5800e-003	150.3323
Mobile	0.3846	2.4490	5.2882	0.0150	0.8981	0.0374	0.9355	0.2417	0.0344	0.2761	0.0000	1,173.6250	1,173.6250	0.0331	0.0000	1,174.3190
Waste						0.0000	0.0000		0.0000	0.0000	28.7719	0.0000	28.7719	1.7004	0.0000	64.4798
Water						0.0000	0.0000		0.0000	0.0000	11.0627	129.9326	140.9953	1.1422	0.0281	173.6820
Total	**1.1168**	**2.4651**	**5.3036**	**0.0151**	**0.8981**	**0.0386**	**0.9367**	**0.2417**	**0.0356**	**0.2773**	**39.8346**	**1,453.2698**	**1,493.1044**	**2.8821**	**0.0296**	**1,562.8170**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7304	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8000e-003	3.8000e-003	1.0000e-005	0.0000	4.0200e-003
Energy	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	149.7084	149.7084	6.4100e-003	1.5800e-003	150.3323
Mobile	0.3846	2.4490	5.2882	0.0150	0.8981	0.0374	0.9355	0.2417	0.0344	0.2761	0.0000	1,173.6250	1,173.6250	0.0331	0.0000	1,174.3190
Waste						0.0000	0.0000		0.0000	0.0000	28.7719	0.0000	28.7719	1.7004	0.0000	64.4798
Water						0.0000	0.0000		0.0000	0.0000	11.0627	129.9326	140.9953	1.1420	0.0280	173.6643
Total	**1.1168**	**2.4651**	**5.3036**	**0.0151**	**0.8981**	**0.0386**	**0.9367**	**0.2417**	**0.0356**	**0.2773**	**39.8346**	**1,453.2698**	**1,493.1044**	**2.8819**	**0.0296**	**1,562.7994**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.13**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2017	1/7/2017	5	5	
2	Grading	Grading	1/8/2017	2/1/2017	5	18	
3	Paving	Paving	2/2/2017	2/20/2017	5	13	
4	Building Construction	Building Construction	2/21/2017	12/31/2017	5	224	
5	Architectural Coating	Architectural Coating	6/1/2017	12/31/2017	5	152	

Acres of Grading (Site Preparation Phase): 8.1

Acres of Grading (Grading Phase): 8.1

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 229,515; Non-Residential Outdoor: 76,505 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	63.00	25.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0194	0.0000	0.0194	8.7400e-003	0.0000	8.7400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.3500e-003	0.0558	0.0428	5.0000e-005		3.2500e-003	3.2500e-003		2.9900e-003	2.9900e-003	0.0000	4.2293	4.2293	1.3000e-003	0.0000	4.2565
Total	**5.3500e-003**	**0.0558**	**0.0428**	**5.0000e-005**	**0.0194**	**3.2500e-003**	**0.0226**	**8.7400e-003**	**2.9900e-003**	**0.0117**	**0.0000**	**4.2293**	**4.2293**	**1.3000e-003**	**0.0000**	**4.2565**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.3000e-004	1.3700e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2353	0.2353	1.0000e-005	0.0000	0.2356
Total	**9.0000e-005**	**1.3000e-004**	**1.3700e-003**	**0.0000**	**2.7000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2353**	**0.2353**	**1.0000e-005**	**0.0000**	**0.2356**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0194	0.0000	0.0194	8.7400e-003	0.0000	8.7400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	2.4000e-003	0.0275	5.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.2293	4.2293	1.3000e-003	0.0000	4.2565
Total	**5.5000e-004**	**2.4000e-003**	**0.0275**	**5.0000e-005**	**0.0194**	**1.0000e-005**	**0.0194**	**8.7400e-003**	**1.0000e-005**	**8.7500e-003**	**0.0000**	**4.2293**	**4.2293**	**1.3000e-003**	**0.0000**	**4.2565**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.3000e-004	1.3700e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2353	0.2353	1.0000e-005	0.0000	0.2356
Total	**9.0000e-005**	**1.3000e-004**	**1.3700e-003**	**0.0000**	**2.7000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2353**	**0.2353**	**1.0000e-005**	**0.0000**	**0.2356**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0585	0.0000	0.0585	0.0303	0.0000	0.0303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0311	0.3238	0.2284	2.7000e-004		0.0184	0.0184		0.0169	0.0169	0.0000	24.8505	24.8505	7.6100e-003	0.0000	25.0104
Total	**0.0311**	**0.3238**	**0.2284**	**2.7000e-004**	**0.0585**	**0.0184**	**0.0768**	**0.0303**	**0.0169**	**0.0471**	**0.0000**	**24.8505**	**24.8505**	**7.6100e-003**	**0.0000**	**25.0104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	7.0000e-004	7.3900e-003	2.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.2708	1.2708	7.0000e-005	0.0000	1.2722
Total	**4.6000e-004**	**7.0000e-004**	**7.3900e-003**	**2.0000e-005**	**1.4800e-003**	**1.0000e-005**	**1.4900e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.2708**	**1.2708**	**7.0000e-005**	**0.0000**	**1.2722**

3.3 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0585	0.0000	0.0585	0.0303	0.0000	0.0303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2600e-003	0.0141	0.1769	2.7000e-004		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	24.8505	24.8505	7.6100e-003	0.0000	25.0104
Total	**3.2600e-003**	**0.0141**	**0.1769**	**2.7000e-004**	**0.0585**	**7.0000e-005**	**0.0586**	**0.0303**	**7.0000e-005**	**0.0303**	**0.0000**	**24.8505**	**24.8505**	**7.6100e-003**	**0.0000**	**25.0104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	7.0000e-004	7.3900e-003	2.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.2708	1.2708	7.0000e-005	0.0000	1.2722
Total	**4.6000e-004**	**7.0000e-004**	**7.3900e-003**	**2.0000e-005**	**1.4800e-003**	**1.0000e-005**	**1.4900e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.2708**	**1.2708**	**7.0000e-005**	**0.0000**	**1.2722**

3.4 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0124	0.1319	0.0957	1.4000e-004		7.4000e-003	7.4000e-003		6.8100e-003	6.8100e-003	0.0000	13.4507	13.4507	4.1200e-003	0.0000	13.5373
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0124**	**0.1319**	**0.0957**	**1.4000e-004**		**7.4000e-003**	**7.4000e-003**		**6.8100e-003**	**6.8100e-003**	**0.0000**	**13.4507**	**13.4507**	**4.1200e-003**	**0.0000**	**13.5373**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	5.1000e-004	5.3400e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9178	0.9178	5.0000e-005	0.0000	0.9188
Total	**3.3000e-004**	**5.1000e-004**	**5.3400e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9178**	**0.9178**	**5.0000e-005**	**0.0000**	**0.9188**

3.4 Paving - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7800e-003	7.7300e-003	0.1100	1.4000e-004		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	13.4507	13.4507	4.1200e-003	0.0000	13.5373
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.7800e-003**	**7.7300e-003**	**0.1100**	**1.4000e-004**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**13.4507**	**13.4507**	**4.1200e-003**	**0.0000**	**13.5373**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	5.1000e-004	5.3400e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9178	0.9178	5.0000e-005	0.0000	0.9188
Total	**3.3000e-004**	**5.1000e-004**	**5.3400e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9178**	**0.9178**	**5.0000e-005**	**0.0000**	**0.9188**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3475	2.9574	2.0305	3.0000e-003		0.1995	0.1995		0.1874	0.1874	0.0000	268.2166	268.2166	0.0660	0.0000	269.6029
Total	**0.3475**	**2.9574**	**2.0305**	**3.0000e-003**		**0.1995**	**0.1995**		**0.1874**	**0.1874**	**0.0000**	**268.2166**	**268.2166**	**0.0660**	**0.0000**	**269.6029**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0232	0.2326	0.3120	6.1000e-004	0.0173	3.6300e-003	0.0209	4.9500e-003	3.3300e-003	8.2900e-003	0.0000	54.2813	54.2813	3.9000e-004	0.0000	54.2895
Worker	0.0240	0.0367	0.3861	9.2000e-004	0.0774	5.6000e-004	0.0779	0.0206	5.2000e-004	0.0211	0.0000	66.4226	66.4226	3.4000e-003	0.0000	66.4941
Total	**0.0472**	**0.2693**	**0.6981**	**1.5300e-003**	**0.0947**	**4.1900e-003**	**0.0989**	**0.0255**	**3.8500e-003**	**0.0294**	**0.0000**	**120.7040**	**120.7040**	**3.7900e-003**	**0.0000**	**120.7836**

3.5 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0366	0.2496	1.9500	3.0000e-003		6.8000e-004	6.8000e-004		6.8000e-004	6.8000e-004	0.0000	268.2163	268.2163	0.0660	0.0000	269.6026
Total	**0.0366**	**0.2496**	**1.9500**	**3.0000e-003**		**6.8000e-004**	**6.8000e-004**		**6.8000e-004**	**6.8000e-004**	**0.0000**	**268.2163**	**268.2163**	**0.0660**	**0.0000**	**269.6026**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0232	0.2326	0.3120	6.1000e-004	0.0173	3.6300e-003	0.0209	4.9500e-003	3.3300e-003	8.2900e-003	0.0000	54.2813	54.2813	3.9000e-004	0.0000	54.2895
Worker	0.0240	0.0367	0.3861	9.2000e-004	0.0774	5.6000e-004	0.0779	0.0206	5.2000e-004	0.0211	0.0000	66.4226	66.4226	3.4000e-003	0.0000	66.4941
Total	**0.0472**	**0.2693**	**0.6981**	**1.5300e-003**	**0.0947**	**4.1900e-003**	**0.0989**	**0.0255**	**3.8500e-003**	**0.0294**	**0.0000**	**120.7040**	**120.7040**	**3.7900e-003**	**0.0000**	**120.7836**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7730					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.1661	0.1420	2.3000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	19.4047	19.4047	2.0500e-003	0.0000	19.4478
Total	**1.7983**	**0.1661**	**0.1420**	**2.3000e-004**		**0.0132**	**0.0132**		**0.0132**	**0.0132**	**0.0000**	**19.4047**	**19.4047**	**2.0500e-003**	**0.0000**	**19.4478**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3600e-003	5.1400e-003	0.0541	1.3000e-004	0.0108	8.0000e-005	0.0109	2.8800e-003	7.0000e-005	2.9500e-003	0.0000	9.3007	9.3007	4.8000e-004	0.0000	9.3107
Total	**3.3600e-003**	**5.1400e-003**	**0.0541**	**1.3000e-004**	**0.0108**	**8.0000e-005**	**0.0109**	**2.8800e-003**	**7.0000e-005**	**2.9500e-003**	**0.0000**	**9.3007**	**9.3007**	**4.8000e-004**	**0.0000**	**9.3107**

3.6 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7730					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2600e-003	9.7900e-003	0.1393	2.3000e-004		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	19.4047	19.4047	2.0500e-003	0.0000	19.4477
Total	**1.7753**	**9.7900e-003**	**0.1393**	**2.3000e-004**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**19.4047**	**19.4047**	**2.0500e-003**	**0.0000**	**19.4477**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3600e-003	5.1400e-003	0.0541	1.3000e-004	0.0108	8.0000e-005	0.0109	2.8800e-003	7.0000e-005	2.9500e-003	0.0000	9.3007	9.3007	4.8000e-004	0.0000	9.3107
Total	**3.3600e-003**	**5.1400e-003**	**0.0541**	**1.3000e-004**	**0.0108**	**8.0000e-005**	**0.0109**	**2.8800e-003**	**7.0000e-005**	**2.9500e-003**	**0.0000**	**9.3007**	**9.3007**	**4.8000e-004**	**0.0000**	**9.3107**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3846	2.4490	5.2882	0.0150	0.8981	0.0374	0.9355	0.2417	0.0344	0.2761	0.0000	1,173.6250	1,173.6250	0.0331	0.0000	1,174.3190
Unmitigated	0.3846	2.4490	5.2882	0.0150	0.8981	0.0374	0.9355	0.2417	0.0344	0.2761	0.0000	1,173.6250	1,173.6250	0.0331	0.0000	1,174.3190

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	544.68	544.68	544.68	2,334,344	2,334,344
Total	544.68	544.68	544.68	2,334,344	2,334,344

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.470000	0.060000	0.140000	0.130000	0.025000	0.025000	0.045000	0.100000	0.001000	0.001000	0.001000	0.001000	0.001000

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	132.2349	132.2349	6.0800e-003	1.2600e-003	132.7524
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	132.2349	132.2349	6.0800e-003	1.2600e-003	132.7524
NaturalGas Mitigated	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	17.4735	17.4735	3.3000e-004	3.2000e-004	17.5799
NaturalGas Unmitigated	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	17.4735	17.4735	3.3000e-004	3.2000e-004	17.5799

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	327441	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	17.4735	17.4735	3.3000e-004	3.2000e-004	17.5799
Total		**1.7700e-003**	**0.0161**	**0.0135**	**1.0000e-004**		**1.2200e-003**	**1.2200e-003**		**1.2200e-003**	**1.2200e-003**	**0.0000**	**17.4735**	**17.4735**	**3.3000e-004**	**3.2000e-004**	**17.5799**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	327441	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	17.4735	17.4735	3.3000e-004	3.2000e-004	17.5799
Total		**1.7700e-003**	**0.0161**	**0.0135**	**1.0000e-004**		**1.2200e-003**	**1.2200e-003**		**1.2200e-003**	**1.2200e-003**	**0.0000**	**17.4735**	**17.4735**	**3.3000e-004**	**3.2000e-004**	**17.5799**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	462090	132.2349	6.0800e-003	1.2600e-003	132.7524
Total		**132.2349**	**6.0800e-003**	**1.2600e-003**	**132.7524**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	462090	132.2349	6.0800e-003	1.2600e-003	132.7524
Total		**132.2349**	**6.0800e-003**	**1.2600e-003**	**132.7524**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7304	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8000e-003	3.8000e-003	1.0000e-005	0.0000	4.0200e-003
Unmitigated	0.7304	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8000e-003	3.8000e-003	1.0000e-005	0.0000	4.0200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1773					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5529					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.9000e-004	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8000e-003	3.8000e-003	1.0000e-005	0.0000	4.0200e-003
Total	**0.7304**	**2.0000e-005**	**1.9800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.8000e-003**	**3.8000e-003**	**1.0000e-005**	**0.0000**	**4.0200e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1773					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5529					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.9000e-004	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8000e-003	3.8000e-003	1.0000e-005	0.0000	4.0200e-003
Total	**0.7304**	**2.0000e-005**	**1.9800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.8000e-003**	**3.8000e-003**	**1.0000e-005**	**0.0000**	**4.0200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	140.9953	1.1420	0.0280	173.6643
Unmitigated	140.9953	1.1422	0.0281	173.6820

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	34.8702 / 0	140.9953	1.1422	0.0281	173.6820
Total		**140.9953**	**1.1422**	**0.0281**	**173.6820**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	34.8702 / 0	140.9953	1.1420	0.0280	173.6643
Total		**140.9953**	**1.1420**	**0.0280**	**173.6643**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	28.7719	1.7004	0.0000	64.4798
Unmitigated	28.7719	1.7004	0.0000	64.4798

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	141.74	28.7719	1.7004	0.0000	64.4798
Total		**28.7719**	**1.7004**	**0.0000**	**64.4798**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	141.74	28.7719	1.7004	0.0000	64.4798
Total		**28.7719**	**1.7004**	**0.0000**	**64.4798**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

ATTACHMENT B

Total Onsite Construction NOx AERMOD Output

```
                    AERMOD PRIME - (DATED  15181)

                    AERMODPrMSPx VERSION
            (C) COPYRIGHT 1998-2015, Trinity Consultants

 Run Began on  5/05/2016 at 14:31:47

** BREEZE AERMOD
** Trinity Consultants
** VERSION  7.10

CO STARTING
CO TITLEONE  NOx Mitigated
CO MODELOPT  DFAULT  CONC
CO RUNORNOT  RUN
CO AVERTIME  1  24  ANNUAL
CO POLLUTID  NOX
CO FINISHED

SO STARTING
SO ELEVUNIT  METERS
SO LOCATION  FUDT901U  AREAPOLY  468475.7  3780849  0
** SRCDESCR  Area Source
SO SRCPARAM  FUDT901U  1.52E-06  3  4  1
SO AREAVERT  FUDT901U  468475.7 3780849  468560.1 3780738.3  468424.5 3780639.3  468342.5 3780744.9
SO SRCGROUP  ALL
SO FINISHED

RE STARTING
RE ELEVUNIT  METERS
** BOUNDARY  L8J2Y001
RE DISCCART  468480.2  3780884.3  1.5  0
RE DISCCART  468540.9  3780804.8  1.5  0
RE DISCCART  468595.5  3780733.2  1.5  0
RE DISCCART  468587.4  3780727.3  1.5  0
RE DISCCART  468506.6  3780668.3  1.5  0
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RE DISCCART  468307.5  3780749.3  1.5  0
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RE DISCCART  468393.7  3780816.6  1.5  0
RE DISCCART  468472.5  3780878.2  1.5  0
** BOUNDARY  L8J2Y00F
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RE DISCCART  468554.5  3780910.6  1.5  0
RE DISCCART  468615.1  3780831.1  1.5  0
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RE DISCCART  468701.5  3780717.7  1.5  0
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RE DISCCART  468574.3  3780624.9  1.5  0
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RE DISCCART  468202.4  3780762.3  1.5  0
RE DISCCART  468249.6  3780799.2  1.5  0
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RE DISCCART  468407.2  3780922.4  1.5  0
RE DISCCART  468486.0  3780984.0  1.5  0
** BOUNDARY  L8J2Y00O
RE DISCCART  468512.0  3781131.2  1.5  0
RE DISCCART  468572.7  3781051.7  1.5  0
RE DISCCART  468633.3  3780972.2  1.5  0
RE DISCCART  468693.9  3780892.7  1.5  0
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** BOUNDARY  L8J2Y00X
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RE DISCCART  468243.1  3781301.8  1.5  0
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RE DISCCART  468479.5  3781486.5  1.5  0
RE DISCCART  468518.8  3781517.3  1.5  0
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RE DISCCART  467849.2  3780993.9  1.5  0
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RE DISCCART  467927.9  3781055.5  1.5  0
RE DISCCART  468006.7  3781117.1  1.5  0
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RE DISCCART  468398.2  3780851.9  1.5  0
RE DISCCART  468477.0  3780913.4  1.5  0
RE FINISHED

ME STARTING
ME SURFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.SFC"
** SURFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.SFC"
ME PROFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.PFL"
** PROFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.PFL"
ME SURFDATA  0 2007
ME UAIRDATA  3190 2007
ME PROFBASE  5  METERS
ME STARTEND  2010  1  1  1  2011  12  31  24
ME FINISHED

OU STARTING
OU RECTABLE  1  FIRST
OU RECTABLE  24  FIRST
OU FILEFORM  FIX
OU PLOTFILE  1  ALL  FIRST  ALL`1`FIRST.plt  10000
OU PLOTFILE  24  ALL  FIRST  ALL`24`FIRST.plt  10001
OU PLOTFILE  ANNUAL  ALL  ALL`ANNUAL.plt  10002
OU FINISHED

** ****************************************************************************
** It is recommended that the user not edit any data below this line
** ****************************************************************************


** AMPTYPE
** AMPDATUM  -1
** AMPZONE  -1
** AMPHEMISPHERE

** PROJECTION  UTM
** DATUM  WGE
** UNITS  METER
** ZONE  11
** HEMISPHERE  N
** ORIGINLON  0
** ORIGINLAT  0
** PARALLEL1  0
** PARALLEL2  0
** AZIMUTH  0
** SCALEFACT  0
** FALSEEAST  0
** FALSENORTH  0

** POSTFMT  UNFORM
** TEMPLATE UserDefined
** AERMODEXE  AERMOD_BREEZE_15181.exe
** AERMAPEXE  AERMAP_EPA_11103.EXE


 ************************************
 *** SETUP Finishes Successfully ***
 ************************************
```

```
**MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                        ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

  --  DEPOSITION LOGIC  --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
**Model Uses NO WET DEPLETION.  WETDPLT  =  F

**Model Uses RURAL Dispersion Only.

**Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

**Other Options Specified:
        TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  NOX

**Model Calculates  2 Short Term Average(s) of:   1-HR  24-HR
    and Calculates ANNUAL Averages

**This Run Includes:      1 Source(s);       1 Source Group(s); and     176 Receptor(s)

              with:      0 POINT(s), including
                         0 POINTCAP(s) and      0 POINTHOR(s)
               and:      0 VOLUME source(s)
               and:      1 AREA type source(s)
               and:      0 LINE source(s)
               and:      0 OPENPIT source(s)


**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date:  14134

**Output Options Selected:
         Model Outputs Tables of ANNUAL Averages by Receptor
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                               m for Missing Hours
                                                               b for Both Calm and Missing Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     5.00 ;  Decay Coef. =    0.000     ;  Rot. Angle
=     0.0
                 Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =
0.10000E+07
                 Output Units   = MICROGRAMS/M**3
```

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

**Input Runstream File: AERMOD.INP

**Output Print File: AERMOD.OUT

*** AERMOD - VERSION 15181 *** *** NOx Mitigated *** 05/05/16
*** AERMET - VERSION 14134 *** *** *** 14:31:47

PAGE 2
**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	LOCATION OF AREA Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
FUDT901U	0	0.15200E-05	468475.7	3780849.0	0.0	3.00	4	1.00	NO	

*** AERMOD - VERSION 15181 *** *** NOx Mitigated *** 05/05/16
*** AERMET - VERSION 14134 *** *** *** 14:31:47

PAGE 3
**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	FUDT901U ,

*** AERMOD - VERSION 15181 *** *** NOx Mitigated *** 05/05/16
*** AERMET - VERSION 14134 *** *** *** 14:31:47

PAGE 4
**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(468480.2, 3780884.3, 1.5, 0.0, 0.0); (468540.9, 3780804.8, 1.5, 0.0, 0.0);
(468595.5, 3780733.2, 1.5, 0.0, 0.0); (468587.4, 3780727.3, 1.5, 0.0, 0.0);
(468506.6, 3780668.3, 1.5, 0.0, 0.0); (468425.9, 3780609.3, 1.5, 0.0, 0.0);
(468419.6, 3780604.8, 1.5, 0.0, 0.0); (468363.0, 3780677.7, 1.5, 0.0, 0.0);
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(468393.7, 3780816.6, 1.5, 0.0, 0.0); (468472.5, 3780878.2, 1.5, 0.0, 0.0);
(468493.9, 3780990.1, 1.5, 0.0, 0.0); (468554.5, 3780910.6, 1.5, 0.0, 0.0);

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(468701.5, 3780717.7, 1.5, 0.0, 0.0); (468655.1, 3780683.8, 1.5, 0.0, 0.0);
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(468349.6, 3780572.7, 1.5, 0.0, 0.0); (468288.3, 3780651.7, 1.5, 0.0, 0.0);
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(468687.8, 3781395.6, 1.5, 0.0, 0.0); (468687.8, 3781395.6, 1.5, 0.0, 0.0);
(468718.1, 3781355.7, 1.5, 0.0, 0.0); (468778.7, 3781276.2, 1.5, 0.0, 0.0);
(468809.0, 3781236.5, 1.5, 0.0, 0.0); (468839.3, 3781196.7, 1.5, 0.0, 0.0);
(468869.6, 3781157.0, 1.5, 0.0, 0.0); (468869.7, 3781156.9, 1.5, 0.0, 0.0);
(468900.0, 3781117.2, 1.5, 0.0, 0.0); (468930.3, 3781077.4, 1.5, 0.0, 0.0);
(468960.6, 3781037.7, 1.5, 0.0, 0.0); (469021.2, 3780958.1, 1.5, 0.0, 0.0);
(469051.6, 3780918.4, 1.5, 0.0, 0.0); (469112.1, 3780838.9, 1.5, 0.0, 0.0);
(469112.2, 3780838.8, 1.5, 0.0, 0.0); (469142.5, 3780799.1, 1.5, 0.0, 0.0);
(469172.8, 3780759.3, 1.5, 0.0, 0.0); (469203.1, 3780719.6, 1.5, 0.0, 0.0);
(469263.8, 3780640.0, 1.5, 0.0, 0.0); (469267.2, 3780635.5, 1.5, 0.0, 0.0);
(469231.5, 3780609.4, 1.5, 0.0, 0.0); (469069.9, 3780491.4, 1.5, 0.0, 0.0);
(469029.6, 3780462.0, 1.5, 0.0, 0.0); (468908.4, 3780373.5, 1.5, 0.0,

```
    0.0);
    ( 468868.0, 3780344.0,       1.5,       0.0,       0.0);         ( 468787.3, 3780285.1,       1.5,       0.0,
    0.0);
    ( 468746.9, 3780255.6,       1.5,       0.0,       0.0);         ( 468625.7, 3780167.1,       1.5,       0.0,
    0.0);
    ( 468585.3, 3780137.7,       1.5,       0.0,       0.0);         ( 468545.0, 3780108.2,       1.5,       0.0,
    0.0);
    ( 468423.8, 3780019.7,       1.5,       0.0,       0.0);         ( 468383.4, 3779990.2,       1.5,       0.0,
    0.0);
*** AERMOD - VERSION  15181 ***   ***  NOx Mitigated                                                          ***
    05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
  14:31:47

  PAGE   5
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                   *** DISCRETE CARTESIAN RECEPTORS ***
                                (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                              (METERS)

    ( 468327.3, 3779949.3,       1.5,       0.0,       0.0);         ( 468308.6, 3779973.3,       1.5,       0.0,
    0.0);
    ( 468277.9, 3780012.8,       1.5,       0.0,       0.0);         ( 468277.9, 3780012.9,       1.5,       0.0,
    0.0);
    ( 468277.9, 3780012.9,       1.5,       0.0,       0.0);         ( 468247.3, 3780052.3,       1.5,       0.0,
    0.0);
    ( 468216.6, 3780091.9,       1.5,       0.0,       0.0);         ( 468185.9, 3780131.3,       1.5,       0.0,
    0.0);
    ( 468155.3, 3780170.8,       1.5,       0.0,       0.0);         ( 468155.3, 3780170.8,       1.5,       0.0,
    0.0);
    ( 468155.2, 3780170.9,       1.5,       0.0,       0.0);         ( 468063.3, 3780289.3,       1.5,       0.0,
    0.0);
    ( 468032.6, 3780328.8,       1.5,       0.0,       0.0);         ( 468001.9, 3780368.2,       1.5,       0.0,
    0.0);
    ( 467971.3, 3780407.7,       1.5,       0.0,       0.0);         ( 467971.2, 3780407.8,       1.5,       0.0,
    0.0);
    ( 467909.9, 3780486.7,       1.5,       0.0,       0.0);         ( 467909.9, 3780486.7,       1.5,       0.0,
    0.0);
    ( 467909.9, 3780486.8,       1.5,       0.0,       0.0);         ( 467879.3, 3780526.2,       1.5,       0.0,
    0.0);
    ( 467848.6, 3780565.8,       1.5,       0.0,       0.0);         ( 467817.9, 3780605.2,       1.5,       0.0,
    0.0);
    ( 467787.3, 3780644.7,       1.5,       0.0,       0.0);         ( 467787.3, 3780644.7,       1.5,       0.0,
    0.0);
    ( 467787.2, 3780644.8,       1.5,       0.0,       0.0);         ( 467695.3, 3780763.2,       1.5,       0.0,
    0.0);
    ( 467664.6, 3780802.7,       1.5,       0.0,       0.0);         ( 467641.9, 3780831.9,       1.5,       0.0,
    0.0);
    ( 467652.1, 3780839.9,       1.5,       0.0,       0.0);         ( 467691.6, 3780870.7,       1.5,       0.0,
    0.0);
    ( 467770.3, 3780932.3,       1.5,       0.0,       0.0);         ( 467770.3, 3780932.3,       1.5,       0.0,
    0.0);
    ( 467809.7, 3780963.1,       1.5,       0.0,       0.0);         ( 467849.1, 3780993.8,       1.5,       0.0,
    0.0);
    ( 467849.2, 3780993.9,       1.5,       0.0,       0.0);         ( 467888.5, 3781024.6,       1.5,       0.0,
    0.0);
    ( 467927.8, 3781055.4,       1.5,       0.0,       0.0);         ( 467927.9, 3781055.5,       1.5,       0.0,
    0.0);
    ( 467927.9, 3781055.5,       1.5,       0.0,       0.0);         ( 468085.4, 3781178.7,       1.5,       0.0,
    0.0);
    ( 468085.5, 3781178.7,       1.5,       0.0,       0.0);         ( 468164.2, 3781240.2,       1.5,       0.0,
    0.0);
    ( 468164.3, 3781240.3,       1.5,       0.0,       0.0);         ( 468203.6, 3781270.9,       1.5,       0.0,
    0.0);
    ( 468243.1, 3781301.8,       1.5,       0.0,       0.0);         ( 468243.1, 3781301.8,       1.5,       0.0,
    0.0);
```

```
     ( 468400.6, 3781424.9,       1.5,       0.0,       0.0);         ( 468400.7, 3781425.0,       1.5,       0.0,
     0.0);
     ( 468479.5, 3781486.5,       1.5,       0.0,       0.0);         ( 468518.8, 3781517.3,       1.5,       0.0,
     0.0);
     ( 468558.2, 3781548.0,       1.5,       0.0,       0.0);         ( 468558.2, 3781548.0,       1.5,       0.0,
     0.0);
     ( 468558.3, 3781548.1,       1.5,       0.0,       0.0);         ( 467770.3, 3780932.3,       1.5,       0.0,
     0.0);
     ( 467809.7, 3780963.1,       1.5,       0.0,       0.0);         ( 467849.1, 3780993.8,       1.5,       0.0,
     0.0);
     ( 467849.2, 3780993.9,       1.5,       0.0,       0.0);         ( 467888.5, 3781024.6,       1.5,       0.0,
     0.0);
     ( 467927.8, 3781055.4,       1.5,       0.0,       0.0);         ( 467927.9, 3781055.5,       1.5,       0.0,
     0.0);
     ( 468006.7, 3781117.1,       1.5,       0.0,       0.0);         ( 468085.5, 3781178.7,       1.5,       0.0,
     0.0);
     ( 468164.2, 3781240.2,       1.5,       0.0,       0.0);         ( 468164.3, 3781240.3,       1.5,       0.0,
     0.0);
     ( 468203.6, 3781270.9,       1.5,       0.0,       0.0);         ( 468243.1, 3781301.8,       1.5,       0.0,
     0.0);
     ( 468321.9, 3781363.4,       1.5,       0.0,       0.0);         ( 468400.7, 3781425.0,       1.5,       0.0,
     0.0);
     ( 468479.5, 3781486.5,       1.5,       0.0,       0.0);         ( 468518.8, 3781517.3,       1.5,       0.0,
     0.0);
     ( 468558.2, 3781548.0,       1.5,       0.0,       0.0);         ( 468558.3, 3781548.1,       1.5,       0.0,
     0.0);
     ( 468484.8, 3780919.6,       1.5,       0.0,       0.0);         ( 468545.4, 3780840.0,       1.5,       0.0,
     0.0);
     ( 468606.0, 3780760.5,       1.5,       0.0,       0.0);         ( 468630.8, 3780728.0,       1.5,       0.0,
     0.0);
     ( 468583.0, 3780693.1,       1.5,       0.0,       0.0);         ( 468502.3, 3780634.2,       1.5,       0.0,
     0.0);
     ( 468421.5, 3780575.2,       1.5,       0.0,       0.0);         ( 468414.8, 3780570.3,       1.5,       0.0,
     0.0);
     ( 468358.6, 3780642.7,       1.5,       0.0,       0.0);         ( 468297.2, 3780721.7,       1.5,       0.0,
     0.0);
     ( 468272.4, 3780753.6,       1.5,       0.0,       0.0);         ( 468319.4, 3780790.3,       1.5,       0.0,
     0.0);
     ( 468398.2, 3780851.9,       1.5,       0.0,       0.0);         ( 468477.0, 3780913.4,       1.5,       0.0,
     0.0);
 *** AERMOD - VERSION  15181 ***   ***  NOx Mitigated                                                          ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                        ***
   14:31:47

   PAGE   6
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                        (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
```

Attach B - 150K LST NOX mitigated concentric
METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2010 1 1 1
AND END DATE: 2011 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** AERMOD - VERSION 15181 *** *** NOx Mitigated ***
05/05/16
*** AERMET - VERSION 14134 *** *** ***
14:31:47

PAGE 7
**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.SFC Met Version: 14134
Profile file: C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.PFL
Surface format: FREE

Profile format: FREE

Surface station no.: 0 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN
Year: 2007 Year: 2007

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
07	01	01	1	01	-0.5	0.030	-9.000	-9.000	-999.	12.	4.4	0.32	1.00	1.00	0.50	27.	9.1	279.9	5.5
07	01	01	1	02	-0.5	0.030	-9.000	-9.000	-999.	12.	4.3	0.32	1.00	1.00	0.50	7.	9.1	279.2	5.5
07	01	01	1	03	-0.5	0.030	-9.000	-9.000	-999.	12.	4.3	0.32	1.00	1.00	0.50	97.	9.1	278.8	5.5
07	01	01	1	04	-0.7	0.030	-9.000	-9.000	-999.	12.	3.1	0.32	1.00	1.00	0.50	148.	9.1	278.1	5.5
07	01	01	1	05	-2.4	0.054	-9.000	-9.000	-999.	30.	5.5	0.32	1.00	1.00	0.90	87.	9.1	278.1	5.5
07	01	01	1	06	-1.7	0.054	-9.000	-9.000	-999.	30.	7.8	0.32	1.00	1.00	0.90	208.	9.1	277.0	5.5
07	01	01	1	07	-1.7	0.054	-9.000	-9.000	-999.	30.	7.8	0.32	1.00	1.00	0.90	156.	9.1	277.5	5.5
07	01	01	1	08	-1.7	0.054	-9.000	-9.000	-999.	30.	7.8	0.32	1.00	0.52	0.90	60.	9.1	277.5	5.5
07	01	01	1	09	34.6	0.390	0.621	0.005	241.	585.	-149.6	0.32	1.00	0.31	3.10	264.	9.1	282.5	5.5
07	01	01	1	10	78.0	0.267	1.066	0.005	541.	341.	-21.3	0.32	1.00	0.24	1.80	242.	9.1	289.2	5.5
07	01	01	1	11	112.9	0.612	1.395	0.019	839.	1149.	-176.9	0.32	1.00	0.21	4.90	82.	9.1	290.4	5.5
07	01	01	1	12	130.3	0.615	1.611	0.020	1120.	1158.	-155.8	0.32	1.00	0.20	4.90	74.	9.1	290.9	5.5
07	01	01	1	13	128.2	0.671	1.662	0.015	1250.	1315.	-204.9	0.32	1.00	0.20	5.40	59.	9.1	290.9	5.5
07	01	01	1	14	107.5	0.712	1.575	0.007	1267.	1439.	-292.1	0.32	1.00	0.22	5.80	58.	9.1	291.4	5.5
07	01	01	1	15	68.1	0.602	1.356	0.021	1277.	1137.	-279.3	0.32	1.00	0.25	4.90	40.	9.1	291.4	

```
5.5
07 01 01   1 16   18.1  0.438  0.872  0.021 1278.  724.   -405.7  0.32   1.00   0.34    3.60  312.    9.1  292.0
5.5
07 01 01   1 17  -25.8  0.263 -9.000 -9.000 -999.  353.     61.6  0.32   1.00   0.63    2.70  342.    9.1  290.9
5.5
07 01 01   1 18   -4.9  0.077 -9.000 -9.000 -999.  114.      8.1  0.32   1.00   1.00    1.30  256.    9.1  289.2
5.5
07 01 01   1 19   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1  0.32   1.00   1.00    1.30  191.    9.1  289.9
5.5
07 01 01   1 20   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1  0.32   1.00   1.00    1.30  197.    9.1  289.9
5.5
07 01 01   1 21   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1  0.32   1.00   1.00    1.30  190.    9.1  289.9
5.5
07 01 01   1 22   -2.4  0.054 -9.000 -9.000 -999.   30.      5.6  0.32   1.00   1.00    0.90  188.    9.1  289.2
5.5
07 01 01   1 23   -9.5  0.107 -9.000 -9.000 -999.   84.     11.3  0.32   1.00   1.00    1.80  162.    9.1  289.9
5.5
07 01 01   1 24   -9.5  0.107 -9.000 -9.000 -999.   84.     11.3  0.32   1.00   1.00    1.80   42.    9.1  289.2
5.5


First hour of profile data
YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
07 01 01 01    5.5 0 -999.  -99.00   279.9   99.0  -99.00  -99.00
07 01 01 01    9.1 1   27.    0.50  -999.0   99.0  -99.00  -99.00

F indicates top of profile (=1) or below (=0)
↑ *** AERMOD - VERSION  15181 ***   ***  NOx Mitigated                                                       ***
    05/05/16
*** AERMET - VERSION  14134 ***   ***                                                                        ***
  14:31:47

  PAGE   8
**MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   2 YEARS FOR SOURCE GROUP: ALL
***
                                 INCLUDING SOURCE(S):     FUDT901U    ,

                                           *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                      ** CONC OF NOX      IN MICROGRAMS/M**3                          **

      X-COORD (M)   Y-COORD (M)        CONC                          X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - -
        468480.20    3780884.30        8.25848                         468540.90    3780804.80       13.68672

        468595.50    3780733.20        3.26485                         468587.40    3780727.30        3.40769

        468506.60    3780668.30        6.58476                         468425.90    3780609.30        9.21793

        468419.60    3780604.80        9.23117                         468363.00    3780677.70       16.31814

        468307.50    3780749.30        8.17686                         468314.90    3780755.00        8.49053

        468393.70    3780816.60        9.69068                         468472.50    3780878.20        8.38481

        468493.90    3780990.10        3.14292                         468554.50    3780910.60        7.62646

        468615.10    3780831.10        5.95116                         468675.80    3780751.50        1.59073

        468701.50    3780717.70        1.02166                         468655.10    3780683.80        1.19413

        468574.30    3780624.90        1.78229                         468493.60    3780565.90        2.88302

        468412.80    3780506.90        3.97199                         468405.10    3780501.30        4.01881
```

468349.60	3780572.70	8.14867	468288.30	3780651.70	8.14297
468226.90	3780730.70	4.45798	468202.40	3780762.30	3.52489
468249.60	3780799.20	4.06959	468328.40	3780860.80	3.84425
468407.20	3780922.40	3.07554	468486.00	3780984.00	3.13107
468512.00	3781131.20	1.46200	468572.70	3781051.70	2.92185
468633.30	3780972.20	4.52949	468693.90	3780892.70	3.24480
468754.50	3780813.10	1.32337	468815.20	3780733.60	0.57774
468843.00	3780697.20	0.44543	468799.20	3780665.20	0.49075
468718.40	3780606.30	0.64329	468637.70	3780547.30	0.87118
468556.90	3780488.30	1.10390	468476.10	3780429.40	1.49188
468395.40	3780370.40	1.91985	468385.60	3780363.30	1.95394
468331.70	3780432.70	3.50575	468270.40	3780511.70	4.89530
468209.00	3780590.70	4.45832	468147.70	3780669.70	3.01316
468086.40	3780748.70	2.01616	468062.30	3780779.70	1.75761
468110.10	3780817.10	1.98926	468188.90	3780878.70	2.12974
468267.70	3780940.20	1.82977	468346.50	3781001.80	1.45591
468425.20	3781063.40	1.34563	468504.00	3781125.00	1.45443
468566.50	3781554.60	0.43051	468657.50	3781435.30	0.70213
468687.80	3781395.60	0.84132	468687.80	3781395.60	0.84132
468718.10	3781355.70	1.01105	468778.70	3781276.20	1.38826
468809.00	3781236.50	1.52052	468839.30	3781196.70	1.54865
468869.60	3781157.00	1.46044	468869.70	3781156.90	1.45998
468900.00	3781117.20	1.29576	468930.30	3781077.40	1.10817
468960.60	3781037.70	0.92263	469021.20	3780958.10	0.58252
469051.60	3780918.40	0.45056	469112.10	3780838.90	0.27882
469112.20	3780838.80	0.27865	469142.50	3780799.10	0.22502
469172.80	3780759.30	0.18607	469203.10	3780719.60	0.15890
469263.80	3780640.00	0.12670	469267.20	3780635.50	0.12538
469231.50	3780609.40	0.13140	469069.90	3780491.40	0.16582

```
*** AERMOD - VERSION  15181 ***   ***  NOx Mitigated                                                    ***
    05/05/16
*** AERMET - VERSION  14134 ***   ***                                                                  ***
  14:31:47

  PAGE   9
**MODELOPTs:   RegDFAULT CONC      ELEV      RURAL
```

Attach B - 150K LST NOX mitigated concentric

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 2 YEARS FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
469029.60	3780462.00	0.18284	468908.40	3780373.50	0.23409
468868.00	3780344.00	0.25165	468787.30	3780285.10	0.28959
468746.90	3780255.60	0.30317	468625.70	3780167.10	0.33191
468585.30	3780137.70	0.35339	468545.00	3780108.20	0.38420
468423.80	3780019.70	0.49509	468383.40	3779990.20	0.52911
468327.30	3779949.30	0.57278	468308.60	3779973.30	0.64654
468277.90	3780012.80	0.78957	468277.90	3780012.90	0.78979
468277.90	3780012.90	0.78979	468247.30	3780052.30	0.95583
468216.60	3780091.90	1.13554	468185.90	3780131.30	1.31052
468155.30	3780170.80	1.46090	468155.30	3780170.80	1.46090
468155.20	3780170.90	1.46123	468063.30	3780289.30	1.62330
468032.60	3780328.80	1.60844	468001.90	3780368.20	1.58108
467971.30	3780407.70	1.52459	467971.20	3780407.80	1.52430
467909.90	3780486.70	1.28608	467909.90	3780486.70	1.28608
467909.90	3780486.80	1.28604	467879.30	3780526.20	1.14988
467848.60	3780565.80	1.02898	467817.90	3780605.20	0.92216
467787.30	3780644.70	0.82651	467787.30	3780644.70	0.82651
467787.20	3780644.80	0.82624	467695.30	3780763.20	0.62814
467664.60	3780802.70	0.58220	467641.90	3780831.90	0.55000
467652.10	3780839.90	0.55856	467691.60	3780870.70	0.59094
467770.30	3780932.30	0.64751	467770.30	3780932.30	0.64751
467809.70	3780963.10	0.66900	467849.10	3780993.80	0.68202
467849.20	3780993.90	0.68201	467888.50	3781024.60	0.68078
467927.80	3781055.40	0.66207	467927.90	3781055.50	0.66196
467927.90	3781055.50	0.66196	468085.40	3781178.70	0.53190
468085.50	3781178.70	0.53196	468164.20	3781240.20	0.48721
468164.30	3781240.30	0.48712	468203.60	3781270.90	0.46108
468243.10	3781301.80	0.42848	468243.10	3781301.80	0.42848

468400.60	3781424.90	0.37320	468400.70	3781425.00	0.37322
468479.50	3781486.50	0.40772	468518.80	3781517.30	0.42151
468558.20	3781548.00	0.42965	468558.20	3781548.00	0.42965
468558.30	3781548.10	0.42964	467770.30	3780932.30	0.64751
467809.70	3780963.10	0.66900	467849.10	3780993.80	0.68202
467849.20	3780993.90	0.68201	467888.50	3781024.60	0.68078
467927.80	3781055.40	0.66207	467927.90	3781055.50	0.66196
468006.70	3781117.10	0.59338	468085.50	3781178.70	0.53196
468164.20	3781240.20	0.48721	468164.30	3781240.30	0.48712
468203.60	3781270.90	0.46108	468243.10	3781301.80	0.42848
468321.90	3781363.40	0.37231	468400.70	3781425.00	0.37322
468479.50	3781486.50	0.40772	468518.80	3781517.30	0.42151

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 2 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
468558.20	3781548.00	0.42965	468558.30	3781548.10	0.42964
468484.80	3780919.60	5.60264	468545.40	3780840.00	11.74671
468606.00	3780760.50	3.98910	468630.80	3780728.00	1.99506
468583.00	3780693.10	2.49608	468502.30	3780634.20	4.64265
468421.50	3780575.20	6.64731	468414.80	3780570.30	6.68202
468358.60	3780642.70	13.24535	468297.20	3780721.70	8.35276
468272.40	3780753.60	5.84946	468319.40	3780790.30	6.68704
468398.20	3780851.90	6.16339	468477.00	3780913.40	5.63278

Attach B - 150K LST NOX mitigated concentric

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
468480.20	3780884.30	145.68028	(10081302)	468540.90	3780804.80	137.02372	(11082102)
468595.50	3780733.20	146.13734	(11110520)	468587.40	3780727.30	145.13969	(10040201)
468506.60	3780668.30	114.77943	(11100802)	468425.90	3780609.30	145.06705	(10083104)
468419.60	3780604.80	145.85449	(11051903)	468363.00	3780677.70	136.99836	(11101123)
468307.50	3780749.30	146.64070	(10090303)	468314.90	3780755.00	145.71424	(10050801)
468393.70	3780816.60	115.01079	(11022004)	468472.50	3780878.20	144.60409	(11080702)
468493.90	3780990.10	111.90415	(11080702)	468554.50	3780910.60	129.49814	(11081504)
468615.10	3780831.10	129.20878	(10091201)	468675.80	3780751.50	122.15128	(11011220)
468701.50	3780717.70	111.89614	(10040201)	468655.10	3780683.80	117.47822	(11092805)
468574.30	3780624.90	110.22686	(10052902)	468493.60	3780565.90	114.24910	(11080403)
468412.80	3780506.90	114.51048	(11103022)	468405.10	3780501.30	113.05635	(10050303)
468349.60	3780572.70	129.45754	(11101802)	468288.30	3780651.70	129.40102	(11050503)
468226.90	3780730.70	122.86922	(11101801)	468202.40	3780762.30	112.97515	(10050801)
468249.60	3780799.20	118.25161	(11051301)	468328.40	3780860.80	110.80422	(11022705)
468407.20	3780922.40	114.07773	(10020501)	468486.00	3780984.00	113.53294	(11101021)
468512.00	3781131.20	78.80041	(11080702)	468572.70	3781051.70	92.85733	(10071303)
468633.30	3780972.20	102.14537	(11050323)	468693.90	3780892.70	103.55884	(11080705)
468754.50	3780813.10	98.06446	(11030324)	468815.20	3780733.60	85.25655	(11110520)
468843.00	3780697.20	78.74364	(10040201)	468799.20	3780665.20	84.32232	(10050802)
468718.40	3780606.30	90.65072	(11081705)	468637.70	3780547.30	91.82481	(10122702)
468556.90	3780488.30	92.10813	(10092304)	468476.10	3780429.40	90.21318	(11050504)
468395.40	3780370.40	81.38746	(10091204)	468385.60	3780363.30	80.00089	(10050303)
468331.70	3780432.70	92.84737	(11120704)	468270.40	3780511.70	102.11174	(10091602)
468209.00	3780590.70	103.65874	(10091404)	468147.70	3780669.70	98.22260	(10091724)
468086.40	3780748.70	85.23219	(11050502)	468062.30	3780779.70	79.52166	(10081404)
468110.10	3780817.10	85.97695	(10061504)	468188.90	3780878.70	91.93845	(10091524)
468267.70	3780940.20	91.87058	(11042903)	468346.50	3781001.80	91.91789	(11101824)
468425.20	3781063.40	89.23536	(11052503)	468504.00	3781125.00	79.92555	

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(11101021)
        468566.50   3781554.60       37.13667  (11101021)                468657.50   3781435.30       43.04988
(11071703)
        468687.80   3781395.60       45.19426  (10062303)                468687.80   3781395.60       45.19426
(10062303)
        468718.10   3781355.70       47.15764  (11110424)                468778.70   3781276.20       50.91364
(11050523)
        468809.00   3781236.50       52.53657  (11062804)                468839.30   3781196.70       53.70456
(11111221)
        468869.60   3781157.00       54.45942  (11081402)                468869.70   3781156.90       54.46712
(11081402)
        468900.00   3781117.20       55.08058  (11071702)                468930.30   3781077.40       55.10809
(11081505)
        468960.60   3781037.70       54.68858  (11051223)                469021.20   3780958.10       52.57600
(10051204)
        469051.60   3780918.40       50.37764  (11083001)                469112.10   3780838.90       47.34303
(11090406)
        469112.20   3780838.80       47.33809  (11090406)                469142.50   3780799.10       45.16951
(11011220)
        469172.80   3780759.30       43.21338  (11090402)                469203.10   3780719.60       41.16634
(11110520)
        469263.80   3780640.00       37.18860  (10040201)                469267.20   3780635.50       36.87990
(10040201)
        469231.50   3780609.40       38.34786  (10112302)                469069.90   3780491.40       44.80671
(11080103)
 *** AERMOD - VERSION  15181 ***   ***  NOx Mitigated                                                          ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                         ***
   14:31:47

   PAGE  12
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL
 ***
                                  INCLUDING SOURCE(S):     FUDT901U    ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                       ** CONC OF NOX      IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
(YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - -
        469029.60   3780462.00       47.44616  (11081705)                468908.40   3780373.50       51.12628
(11030401)
        468868.00   3780344.00       51.83464  (10052902)                468787.30   3780285.10       52.40988
(11030921)
        468746.90   3780255.60       52.27899  (11032901)                468625.70   3780167.10       50.19734
(11111404)
        468585.30   3780137.70       48.91600  (11080403)                468545.00   3780108.20       47.43605
(11031803)
        468423.80   3780019.70       42.35101  (11050402)                468383.40   3779990.20       40.51024
(10040224)
        468327.30   3779949.30       37.96182  (11103022)                468308.60   3779973.30       39.08813
(10050303)
        468277.90   3780012.80       41.13545  (11051903)                468277.90   3780012.90       41.14111
(11051903)
        468277.90   3780012.90       41.14111  (11051903)                468247.30   3780052.30       43.16457
(11070105)
        468216.60   3780091.90       45.71348  (11120704)                468185.90   3780131.30       47.26676
(11090405)
        468155.30   3780170.80       49.24114  (10061502)                468155.30   3780170.80       49.24114
(10061502)
        468155.20   3780170.90       49.24202  (10061502)                468063.30   3780289.30       53.71111
(10092503)
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        468032.60   3780328.80       54.62551  (10091104)                468001.90   3780368.20       55.05939
(10050423)
        467971.30   3780407.70       55.05834  (11071804)                467971.20   3780407.80       55.05548
(11071804)
        467909.90   3780486.70       53.65174  (11062702)                467909.90   3780486.70       53.65174
(11062702)
        467909.90   3780486.80       53.65811  (11062702)                467879.30   3780526.20       52.43849
(11100922)
        467848.60   3780565.80       50.82766  (10040824)                467817.90   3780605.20       49.05909
(11070103)
        467787.30   3780644.70       47.06560  (10032422)                467787.30   3780644.70       47.06560
(10032422)
        467787.20   3780644.80       47.06170  (10032422)                467695.30   3780763.20       40.87706
(10090303)
        467664.60   3780802.70       38.88581  (10090101)                467641.90   3780831.90       37.47306
(10081404)
        467652.10   3780839.90       37.97726  (10080203)                467691.60   3780870.70       39.74092
(10041703)
        467770.30   3780932.30       43.41771  (11051301)                467770.30   3780932.30       43.41771
(11051301)
        467809.70   3780963.10       45.25610  (11051302)                467849.10   3780993.80       46.90051
(10081204)
        467849.20   3780993.90       46.90624  (10081204)                467888.50   3781024.60       48.41935
(10051305)
        467927.80   3781055.40       49.76576  (10091904)                467927.90   3781055.50       49.76832
(10091904)
        467927.90   3781055.50       49.76832  (10091904)                468085.40   3781178.70       52.40736
(11093004)
        468085.50   3781178.70       52.41293  (11093004)                468164.20   3781240.20       52.03384
(10090505)
        468164.30   3781240.30       52.03152  (10090505)                468203.60   3781270.90       51.41845
(11080704)
        468243.10   3781301.80       50.47448  (10111504)                468243.10   3781301.80       50.47448
(10111504)
        468400.60   3781424.90       44.73388  (11091801)                468400.70   3781425.00       44.73026
(11091801)
        468479.50   3781486.50       41.15649  (10050805)                468518.80   3781517.30       39.31979
(11090905)
        468558.20   3781548.00       37.43060  (11101021)                468558.20   3781548.00       37.43060
(11101021)
        468558.30   3781548.10       37.42698  (11101021)                467770.30   3780932.30       43.41771
(11051301)
        467809.70   3780963.10       45.25610  (11051302)                467849.10   3780993.80       46.90051
(10081204)
        467849.20   3780993.90       46.90624  (10081204)                467888.50   3781024.60       48.41935
(10051305)
        467927.80   3781055.40       49.76576  (10091904)                467927.90   3781055.50       49.76832
(10091904)
        468006.70   3781117.10       51.88737  (11022705)                468085.50   3781178.70       52.41293
(11093004)
        468164.20   3781240.20       52.03384  (10090505)                468164.30   3781240.30       52.03152
(10090505)
        468203.60   3781270.90       51.41845  (11080704)                468243.10   3781301.80       50.47448
(10111504)
        468321.90   3781363.40       47.73756  (11062603)                468400.70   3781425.00       44.73026
(11091801)
        468479.50   3781486.50       41.15649  (10050805)                468518.80   3781517.30       39.31979
(11090905)
*** AERMOD - VERSION  15181 ***   ***  NOx Mitigated                                                          ***
    05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                        ***
   14:31:47

   PAGE  13
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL
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***

INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
468558.20	3781548.00	37.43060	(11101021)	468558.30	3781548.10	37.42698	(11101021)
468484.80	3780919.60	135.05118	(10013020)	468545.40	3780840.00	138.00121	(11081402)
468606.00	3780760.50	144.52766	(11090406)	468630.80	3780728.00	134.68982	(11090722)
468583.00	3780693.10	128.28928	(11080103)	468502.30	3780634.20	118.21299	(11111404)
468421.50	3780575.20	136.32326	(10050303)	468414.80	3780570.30	135.66518	(11072003)
468358.60	3780642.70	138.56616	(11091904)	468297.20	3780721.70	144.50980	(10020121)
468272.40	3780753.60	136.04288	(10090101)	468319.40	3780790.30	129.25968	(10083101)
468398.20	3780851.90	117.28350	(10112223)	468477.00	3780913.40	135.87442	(11080702)

*** AERMOD - VERSION 15181 *** *** NOx Mitigated *** 05/05/16
*** AERMET - VERSION 14134 *** *** *** 14:31:47

PAGE 14
**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
468480.20	3780884.30	39.26556	(11032824)	468540.90	3780804.80	53.81263m	(11081524)
468595.50	3780733.20	20.00631	(11061224)	468587.40	3780727.30	20.49973	(10121524)
468506.60	3780668.30	25.83858m	(10123124)	468425.90	3780609.30	44.86194	(11122624)
468419.60	3780604.80	46.48299	(11122624)	468363.00	3780677.70	63.93617	(11121924)
468307.50	3780749.30	44.74781	(11013024)	468314.90	3780755.00	46.57566	(11013024)
468393.70	3780816.60	38.76081	(11111924)	468472.50	3780878.20	38.95052	(11032824)
468493.90	3780990.10	20.56864	(11032824)	468554.50	3780910.60	38.01155m	(11081524)
468615.10	3780831.10	33.53528m	(11081424)	468675.80	3780751.50	14.47662	(11061224)
468701.50	3780717.70	10.10887	(11061224)	468655.10	3780683.80	12.10660	(11111224)
468574.30	3780624.90	12.87800	(11011024)	468493.60	3780565.90	18.68808m	(10123124)

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        468412.80   3780506.90       22.68451m (10123124)                468405.10   3780501.30       22.38600
(11111724)
        468349.60   3780572.70       44.64081  (11122624)                468288.30   3780651.70       41.85584
(11121924)
        468226.90   3780730.70       24.38318  (11013024)                468202.40   3780762.30       18.79333
(11121324)
        468249.60   3780799.20       27.78970  (11111924)                468328.40   3780860.80       24.24363
(11111924)
        468407.20   3780922.40       17.76431m (11041424)                468486.00   3780984.00       20.54546
(11032824)
        468512.00   3781131.20       10.56877  (11032824)                468572.70   3781051.70       17.88293m
(11081624)
        468633.30   3780972.20       28.65562m (11081524)                468693.90   3780892.70       20.91230m
(11081424)
        468754.50   3780813.10       10.51029m (11081624)                468815.20   3780733.60        7.58416
(11061224)
        468843.00   3780697.20        5.34140  (11111224)                468799.20   3780665.20        7.98444
(11111224)
        468718.40   3780606.30        6.85809  (10121524)                468637.70   3780547.30        8.15502
(11011024)
        468556.90   3780488.30        8.22896  (10022024)                468476.10   3780429.40       12.96497m
(10123124)
        468395.40   3780370.40       13.07587m (10123124)                468385.60   3780363.30       12.83806
(11111724)
        468331.70   3780432.70       22.55414  (11122624)                468270.40   3780511.70       26.74499
(11112724)
        468209.00   3780590.70       26.91284  (11121924)                468147.70   3780669.70       17.23595
(11112424)
        468086.40   3780748.70       10.92900c (11022224)                468062.30   3780779.70        9.84846
(11121324)
        468110.10   3780817.10       14.71421  (11111924)                468188.90   3780878.70       16.59048m
(10121824)
        468267.70   3780940.20       16.41498  (10111524)                468346.50   3781001.80       11.22240
(11092224)
        468425.20   3781063.40        9.86124m (11070724)                468504.00   3781125.00       10.58234
(11032824)
        468566.50   3781554.60        4.34369  (10081724)                468657.50   3781435.30        5.25592
(11082124)
        468687.80   3781395.60        6.31660  (11082124)                468687.80   3781395.60        6.31660
(11082124)
        468718.10   3781355.70        7.47079m (11081624)                468778.70   3781276.20        8.81363m
(11081524)
        468809.00   3781236.50       11.49769m (11081524)                468839.30   3781196.70       11.85058m
(11081524)
        468869.60   3781157.00       10.68809m (11081524)                468869.70   3781156.90       10.68394m
(11081524)
        468900.00   3781117.20       10.28416m (11081424)                468930.30   3781077.40        8.75823m
(11081524)
        468960.60   3781037.70        6.73729m (11081524)                469021.20   3780958.10        5.71671m
(11081624)
        469051.60   3780918.40        5.02982m (11081624)                469112.10   3780838.90        4.02108
(11051824)
        469112.20   3780838.80        4.01880  (11051824)                469142.50   3780799.10        3.87624
(11061224)
        469172.80   3780759.30        3.33408  (11061224)                469203.10   3780719.60        2.65824
(11061224)
        469263.80   3780640.00        1.75988  (11111324)                469267.20   3780635.50        1.75526
(11111224)
        469231.50   3780609.40        2.55133  (11111224)                469069.90   3780491.40        3.02690
(11111224)
 *** AERMOD - VERSION  15181 ***   ***  NOx Mitigated                                                        ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                       ***
   14:31:47

   PAGE  15
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL
```

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
469029.60	3780462.00	2.88677	(10121524)	468908.40	3780373.50	2.95832	(11030624)
468868.00	3780344.00	3.97469	(10052924)	468787.30	3780285.10	3.26694	(11082624)
468746.90	3780255.60	3.58428	(10022024)	468625.70	3780167.10	3.74394	(10082224)
468585.30	3780137.70	4.97138m	(11031824)	468545.00	3780108.20	5.32011m	(11031824)
468423.80	3780019.70	6.27443m	(10123124)	468383.40	3779990.20	5.70810m	(10123124)
468327.30	3779949.30	5.47906	(11031024)	468308.60	3779973.30	5.79760	(11031024)
468277.90	3780012.80	6.76764	(11111724)	468277.90	3780012.90	6.76936	(11111724)
468277.90	3780012.90	6.76936	(11111724)	468247.30	3780052.30	7.77782	(11111724)
468216.60	3780091.90	8.00688	(11111724)	468185.90	3780131.30	9.37092	(11122624)
468155.30	3780170.80	11.03598	(11122624)	468155.30	3780170.80	11.03598	(11122624)
468155.20	3780170.90	11.03897	(11122624)	468063.30	3780289.30	10.59551	(11112724)
468032.60	3780328.80	10.19496	(11112724)	468001.90	3780368.20	9.55610	(11121924)
467971.30	3780407.70	11.33987	(11121924)	467971.20	3780407.80	11.34190	(11121924)
467909.90	3780486.70	8.92857	(10121324)	467909.90	3780486.70	8.92857	(10121324)
467909.90	3780486.80	8.92855	(10121324)	467879.30	3780526.20	7.37668	(10121324)
467848.60	3780565.80	7.37001m	(10110924)	467817.90	3780605.20	6.79411	(11111224)
467787.30	3780644.70	5.62966	(11013024)	467787.30	3780644.70	5.62966	(11013024)
467787.20	3780644.80	5.62723	(11013024)	467695.30	3780763.20	4.79111c	(11022224)
467664.60	3780802.70	3.89033	(11031424)	467641.90	3780831.90	3.47469	(11121924)
467652.10	3780839.90	3.53966	(11121324)	467691.60	3780870.70	4.45330	(11010724)
467770.30	3780932.30	5.64930	(11111924)	467770.30	3780932.30	5.64930	(11111924)
467809.70	3780963.10	7.03886	(11111924)	467849.10	3780993.80	7.56816	(11111924)
467849.20	3780993.90	7.56747	(11111924)	467888.50	3781024.60	6.72176	(11111924)
467927.80	3781055.40	5.68108m	(10121824)	467927.90	3781055.50	5.67726m	(10121824)
467927.90	3781055.50	5.67726m	(10121824)	468085.40	3781178.70	7.47857	(10111524)
468085.50	3781178.70	7.47678	(10111524)	468164.20	3781240.20	4.74704m	(10082524)
468164.30	3781240.30	4.74555m	(10082524)	468203.60	3781270.90	4.86655	(11092224)

468243.10	3781301.80	4.43181	(11092224)	468243.10	3781301.80	4.43181	(11092224)
468400.60	3781424.90	3.87394	(11052824)	468400.70	3781425.00	3.87461	(11052824)
468479.50	3781486.50	4.13141m	(11070724)	468518.80	3781517.30	4.00717	(10081724)
468558.20	3781548.00	4.34081	(10081724)	468558.20	3781548.00	4.34081	(10081724)
468558.30	3781548.10	4.34082	(10081724)	467770.30	3780932.30	5.64930	(11111924)
467809.70	3780963.10	7.03886	(11111924)	467849.10	3780993.80	7.56816	(11111924)
467849.20	3780993.90	7.56747	(11111924)	467888.50	3781024.60	6.72176	(11111924)
467927.80	3781055.40	5.68108m	(10121824)	467927.90	3781055.50	5.67726m	(10121824)
468006.70	3781117.10	7.02261	(10111524)	468085.50	3781178.70	7.47678	(10111524)
468164.20	3781240.20	4.74704m	(10082524)	468164.30	3781240.30	4.74555m	(10082524)
468203.60	3781270.90	4.86655	(11092224)	468243.10	3781301.80	4.43181	(11092224)
468321.90	3781363.40	3.87765m	(11041424)	468400.70	3781425.00	3.87461	(11052824)
468479.50	3781486.50	4.13141m	(11070724)	468518.80	3781517.30	4.00717	(10081724)

↑ *** AERMOD - VERSION 15181 *** *** NOx Mitigated *** 05/05/16
*** AERMET - VERSION 14134 *** *** *** 14:31:47

PAGE 16
**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
468558.20	3781548.00	4.34081	(10081724)	468558.30	3781548.10	4.34082	(10081724)
468484.80	3780919.60	31.27714	(11032824)	468545.40	3780840.00	54.25385m	(11081524)
468606.00	3780760.50	22.16880	(11061224)	468630.80	3780728.00	15.51912	(11061224)
468583.00	3780693.10	16.64563	(11051024)	468502.30	3780634.20	23.11956m	(10123124)
468421.50	3780575.20	33.52043	(11122624)	468414.80	3780570.30	34.91427	(11122624)
468358.60	3780642.70	52.58449	(11121924)	468297.20	3780721.70	40.88186	(11013024)
468272.40	3780753.60	32.42291	(11013024)	468319.40	3780790.30	39.19904	(11111924)
468398.20	3780851.90	26.05837	(11092224)	468477.00	3780913.40	31.20584	(11032824)

↑ *** AERMOD - VERSION 15181 *** *** NOx Mitigated *** 05/05/16
*** AERMET - VERSION 14134 *** *** *** 14:31:47

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**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 2 YEARS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

NETWORK GROUP ID GRID-ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE
ALL	1ST HIGHEST VALUE IS	16.31814	AT (468363.00, 3780677.70, 1.50, 0.00, 0.00)	DC
	2ND HIGHEST VALUE IS	13.68672	AT (468540.90, 3780804.80, 1.50, 0.00, 0.00)	DC
	3RD HIGHEST VALUE IS	13.24535	AT (468358.60, 3780642.70, 1.50, 0.00, 0.00)	DC
	4TH HIGHEST VALUE IS	11.74671	AT (468545.40, 3780840.00, 1.50, 0.00, 0.00)	DC
	5TH HIGHEST VALUE IS	9.69068	AT (468393.70, 3780816.60, 1.50, 0.00, 0.00)	DC
	6TH HIGHEST VALUE IS	9.23117	AT (468419.60, 3780604.80, 1.50, 0.00, 0.00)	DC
	7TH HIGHEST VALUE IS	9.21793	AT (468425.90, 3780609.30, 1.50, 0.00, 0.00)	DC
	8TH HIGHEST VALUE IS	8.49053	AT (468314.90, 3780755.00, 1.50, 0.00, 0.00)	DC
	9TH HIGHEST VALUE IS	8.38481	AT (468472.50, 3780878.20, 1.50, 0.00, 0.00)	DC
	10TH HIGHEST VALUE IS	8.35276	AT (468297.20, 3780721.70, 1.50, 0.00, 0.00)	DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** AERMOD - VERSION 15181 *** *** NOx Mitigated ***
05/05/16
*** AERMET - VERSION 14134 *** *** ***
14:31:47

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**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

NETWORK GROUP ID OF TYPE GRID-ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)
ALL	HIGH 1ST HIGH VALUE IS	146.64070	ON 10090303:	AT (468307.50, 3780749.30, 1.50, 0.00, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR

```
                    DC = DISCCART
                    DP = DISCPOLR
↑ *** AERMOD - VERSION  15181 ***   ***  NOx Mitigated                                                  ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                  ***
   14:31:47

   PAGE  19
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                        *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                         ** CONC OF NOX      IN MICROGRAMS/M**3                         **

                                                    DATE
          NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)
 OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS      63.93617  ON 11121924: AT (  468363.00,  3780677.70,     1.50,     0.00,
0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION  15181 ***   ***  NOx Mitigated                                                  ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                  ***
   14:31:47

   PAGE  20
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of           0 Fatal Error Message(s)
 A Total of           0 Warning Message(s)
 A Total of        1086 Informational Message(s)

 A Total of       17520 Hours Were Processed

 A Total of           5 Calm Hours Identified

 A Total of         533 Missing Hours Identified (  3.04 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

ATTACHMENT C

Total Onsite Construction PM_{10} AERMOD Output

```
                    AERMOD PRIME - (DATED  15181)

                    AERMODPrMSPx VERSION
            (C) COPYRIGHT 1998-2015, Trinity Consultants

 Run Began on  5/05/2016 at 14:05:24

** BREEZE AERMOD
** Trinity Consultants
** VERSION  7.10

CO STARTING
CO TITLEONE  PM10 Mitigated
CO MODELOPT  DFAULT  CONC  NOWETDPLT  DRYDPLT
CO RUNORNOT  RUN
CO AVERTIME  1  24  ANNUAL
CO POLLUTID  PM10
CO FINISHED

SO STARTING
SO ELEVUNIT  METERS
SO LOCATION  FUDT901U  AREAPOLY  468475.7  3780849  0
** SRCDESCR  Area Source
SO SRCPARAM  FUDT901U  2.88E-07  3  4  1
SO AREAVERT  FUDT901U  468475.7 3780849  468560.1 3780738.3  468424.5 3780639.3  468342.5 3780744.9
SO PARTDIAM  FUDT901U  1  2.5  10
SO MASSFRAX  FUDT901U  .07870  .12920  .79220
SO PARTDENS  FUDT901U  2.3  2.3  2.3
SO SRCGROUP  ALL
SO FINISHED

RE STARTING
RE ELEVUNIT  METERS
** BOUNDARY  L8J2Y001
RE DISCCART  468480.2  3780884.3  1.5  0
RE DISCCART  468540.9  3780804.8  1.5  0
RE DISCCART  468595.5  3780733.2  1.5  0
RE DISCCART  468587.4  3780727.3  1.5  0
RE DISCCART  468506.6  3780668.3  1.5  0
RE DISCCART  468425.9  3780609.3  1.5  0
RE DISCCART  468419.6  3780604.8  1.5  0
RE DISCCART  468363.0  3780677.7  1.5  0
RE DISCCART  468307.5  3780749.3  1.5  0
RE DISCCART  468314.9  3780755.0  1.5  0
RE DISCCART  468393.7  3780816.6  1.5  0
RE DISCCART  468472.5  3780878.2  1.5  0
** BOUNDARY  L8J2Y00F
RE DISCCART  468493.9  3780990.1  1.5  0
RE DISCCART  468554.5  3780910.6  1.5  0
RE DISCCART  468615.1  3780831.1  1.5  0
RE DISCCART  468675.8  3780751.5  1.5  0
RE DISCCART  468701.5  3780717.7  1.5  0
RE DISCCART  468655.1  3780683.8  1.5  0
RE DISCCART  468574.3  3780624.9  1.5  0
RE DISCCART  468493.6  3780565.9  1.5  0
RE DISCCART  468412.8  3780506.9  1.5  0
RE DISCCART  468405.1  3780501.3  1.5  0
RE DISCCART  468349.6  3780572.7  1.5  0
RE DISCCART  468288.3  3780651.7  1.5  0
RE DISCCART  468226.9  3780730.7  1.5  0
RE DISCCART  468202.4  3780762.3  1.5  0
RE DISCCART  468249.6  3780799.2  1.5  0
RE DISCCART  468328.4  3780860.8  1.5  0
RE DISCCART  468407.2  3780922.4  1.5  0
RE DISCCART  468486.0  3780984.0  1.5  0
** BOUNDARY  L8J2Y00O
RE DISCCART  468512.0  3781131.2  1.5  0
```

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RE DISCCART  468572.7  3781051.7  1.5  0
RE DISCCART  468633.3  3780972.2  1.5  0
RE DISCCART  468693.9  3780892.7  1.5  0
RE DISCCART  468754.5  3780813.1  1.5  0
RE DISCCART  468815.2  3780733.6  1.5  0
RE DISCCART  468843.0  3780697.2  1.5  0
RE DISCCART  468799.2  3780665.2  1.5  0
RE DISCCART  468718.4  3780606.3  1.5  0
RE DISCCART  468637.7  3780547.3  1.5  0
RE DISCCART  468556.9  3780488.3  1.5  0
RE DISCCART  468476.1  3780429.4  1.5  0
RE DISCCART  468395.4  3780370.4  1.5  0
RE DISCCART  468385.6  3780363.3  1.5  0
RE DISCCART  468331.7  3780432.7  1.5  0
RE DISCCART  468270.4  3780511.7  1.5  0
RE DISCCART  468209.0  3780590.7  1.5  0
RE DISCCART  468147.7  3780669.7  1.5  0
RE DISCCART  468086.4  3780748.7  1.5  0
RE DISCCART  468062.3  3780779.7  1.5  0
RE DISCCART  468110.1  3780817.1  1.5  0
RE DISCCART  468188.9  3780878.7  1.5  0
RE DISCCART  468267.7  3780940.2  1.5  0
RE DISCCART  468346.5  3781001.8  1.5  0
RE DISCCART  468425.2  3781063.4  1.5  0
RE DISCCART  468504.0  3781125.0  1.5  0
** BOUNDARY  L8J2Y00X
RE DISCCART  468566.5  3781554.6  1.5  0
RE DISCCART  468657.5  3781435.3  1.5  0
RE DISCCART  468687.8  3781395.6  1.5  0
RE DISCCART  468687.8  3781395.6  1.5  0
RE DISCCART  468718.1  3781355.7  1.5  0
RE DISCCART  468778.7  3781276.2  1.5  0
RE DISCCART  468809.0  3781236.5  1.5  0
RE DISCCART  468839.3  3781196.7  1.5  0
RE DISCCART  468869.6  3781157.0  1.5  0
RE DISCCART  468869.7  3781156.9  1.5  0
RE DISCCART  468900.0  3781117.2  1.5  0
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RE DISCCART  469051.6  3780918.4  1.5  0
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RE DISCCART  469112.2  3780838.8  1.5  0
RE DISCCART  469142.5  3780799.1  1.5  0
RE DISCCART  469172.8  3780759.3  1.5  0
RE DISCCART  469203.1  3780719.6  1.5  0
RE DISCCART  469263.8  3780640.0  1.5  0
RE DISCCART  469267.2  3780635.5  1.5  0
RE DISCCART  469231.5  3780609.4  1.5  0
RE DISCCART  469069.9  3780491.4  1.5  0
RE DISCCART  469029.6  3780462.0  1.5  0
RE DISCCART  468908.4  3780373.5  1.5  0
RE DISCCART  468868.0  3780344.0  1.5  0
RE DISCCART  468787.3  3780285.1  1.5  0
RE DISCCART  468746.9  3780255.6  1.5  0
RE DISCCART  468625.7  3780167.1  1.5  0
RE DISCCART  468585.3  3780137.7  1.5  0
RE DISCCART  468545.0  3780108.2  1.5  0
RE DISCCART  468423.8  3780019.7  1.5  0
RE DISCCART  468383.4  3779990.2  1.5  0
RE DISCCART  468327.3  3779949.3  1.5  0
RE DISCCART  468308.6  3779973.3  1.5  0
RE DISCCART  468277.9  3780012.8  1.5  0
RE DISCCART  468277.9  3780012.9  1.5  0
RE DISCCART  468277.9  3780012.9  1.5  0
RE DISCCART  468247.3  3780052.3  1.5  0
RE DISCCART  468216.6  3780091.9  1.5  0
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RE DISCCART  468185.9  3780131.3  1.5  0
RE DISCCART  468155.3  3780170.8  1.5  0
RE DISCCART  468155.3  3780170.8  1.5  0
RE DISCCART  468155.2  3780170.9  1.5  0
RE DISCCART  468063.3  3780289.3  1.5  0
RE DISCCART  468032.6  3780328.8  1.5  0
RE DISCCART  468001.9  3780368.2  1.5  0
RE DISCCART  467971.3  3780407.7  1.5  0
RE DISCCART  467971.2  3780407.8  1.5  0
RE DISCCART  467909.9  3780486.7  1.5  0
RE DISCCART  467909.9  3780486.7  1.5  0
RE DISCCART  467909.9  3780486.8  1.5  0
RE DISCCART  467879.3  3780526.2  1.5  0
RE DISCCART  467848.6  3780565.8  1.5  0
RE DISCCART  467817.9  3780605.2  1.5  0
RE DISCCART  467787.3  3780644.7  1.5  0
RE DISCCART  467787.3  3780644.7  1.5  0
RE DISCCART  467787.2  3780644.8  1.5  0
RE DISCCART  467695.3  3780763.2  1.5  0
RE DISCCART  467664.6  3780802.7  1.5  0
RE DISCCART  467641.9  3780831.9  1.5  0
RE DISCCART  467652.1  3780839.9  1.5  0
RE DISCCART  467691.6  3780870.7  1.5  0
RE DISCCART  467770.3  3780932.3  1.5  0
RE DISCCART  467770.3  3780932.3  1.5  0
RE DISCCART  467809.7  3780963.1  1.5  0
RE DISCCART  467849.1  3780993.8  1.5  0
RE DISCCART  467849.2  3780993.9  1.5  0
RE DISCCART  467888.5  3781024.6  1.5  0
RE DISCCART  467927.8  3781055.4  1.5  0
RE DISCCART  467927.9  3781055.5  1.5  0
RE DISCCART  467927.9  3781055.5  1.5  0
RE DISCCART  468085.4  3781178.7  1.5  0
RE DISCCART  468085.5  3781178.7  1.5  0
RE DISCCART  468164.2  3781240.2  1.5  0
RE DISCCART  468164.3  3781240.3  1.5  0
RE DISCCART  468203.6  3781270.9  1.5  0
RE DISCCART  468243.1  3781301.8  1.5  0
RE DISCCART  468243.1  3781301.8  1.5  0
RE DISCCART  468400.6  3781424.9  1.5  0
RE DISCCART  468400.7  3781425.0  1.5  0
RE DISCCART  468479.5  3781486.5  1.5  0
RE DISCCART  468518.8  3781517.3  1.5  0
RE DISCCART  468558.2  3781548.0  1.5  0
RE DISCCART  468558.2  3781548.0  1.5  0
RE DISCCART  468558.3  3781548.1  1.5  0
RE DISCCART  467770.3  3780932.3  1.5  0
RE DISCCART  467809.7  3780963.1  1.5  0
RE DISCCART  467849.1  3780993.8  1.5  0
RE DISCCART  467849.2  3780993.9  1.5  0
RE DISCCART  467888.5  3781024.6  1.5  0
RE DISCCART  467927.8  3781055.4  1.5  0
RE DISCCART  467927.9  3781055.5  1.5  0
RE DISCCART  468006.7  3781117.1  1.5  0
RE DISCCART  468085.5  3781178.7  1.5  0
RE DISCCART  468164.2  3781240.2  1.5  0
RE DISCCART  468164.3  3781240.3  1.5  0
RE DISCCART  468203.6  3781270.9  1.5  0
RE DISCCART  468243.1  3781301.8  1.5  0
RE DISCCART  468321.9  3781363.4  1.5  0
RE DISCCART  468400.7  3781425.0  1.5  0
RE DISCCART  468479.5  3781486.5  1.5  0
RE DISCCART  468518.8  3781517.3  1.5  0
RE DISCCART  468558.2  3781548.0  1.5  0
RE DISCCART  468558.3  3781548.1  1.5  0
** BOUNDARY  L8J2Y023
RE DISCCART  468484.8  3780919.6  1.5  0
```

```
RE DISCCART  468545.4  3780840.0  1.5  0
RE DISCCART  468606.0  3780760.5  1.5  0
RE DISCCART  468630.8  3780728.0  1.5  0
RE DISCCART  468583.0  3780693.1  1.5  0
RE DISCCART  468502.3  3780634.2  1.5  0
RE DISCCART  468421.5  3780575.2  1.5  0
RE DISCCART  468414.8  3780570.3  1.5  0
RE DISCCART  468358.6  3780642.7  1.5  0
RE DISCCART  468297.2  3780721.7  1.5  0
RE DISCCART  468272.4  3780753.6  1.5  0
RE DISCCART  468319.4  3780790.3  1.5  0
RE DISCCART  468398.2  3780851.9  1.5  0
RE DISCCART  468477.0  3780913.4  1.5  0
RE FINISHED

ME STARTING
ME SURFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.SFC"
** SURFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.SFC"
ME PROFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.PFL"
** PROFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.PFL"
ME SURFDATA  0 2007
ME UAIRDATA  3190 2007
ME PROFBASE  5  METERS
ME STARTEND  2010  1  1  1  2011  12  31  24
ME FINISHED

OU STARTING
OU RECTABLE  1  FIRST
OU RECTABLE  24  FIRST
OU FILEFORM  FIX
OU PLOTFILE  1  ALL  FIRST  ALL`1`FIRST.plt  10000
OU PLOTFILE  24  ALL  FIRST  ALL`24`FIRST.plt  10001
OU PLOTFILE  ANNUAL  ALL  ALL`ANNUAL.plt  10002
OU FINISHED

** ****************************************************************************
** It is recommended that the user not edit any data below this line
** ****************************************************************************


** AMPTYPE
** AMPDATUM  -1
** AMPZONE  -1
** AMPHEMISPHERE

** PROJECTION  UTM
** DATUM  WGE
** UNITS  METER
** ZONE  11
** HEMISPHERE  N
** ORIGINLON  0
** ORIGINLAT  0
** PARALLEL1  0
** PARALLEL2  0
** AZIMUTH  0
** SCALEFACT  0
** FALSEEAST  0
** FALSENORTH  0

** POSTFMT  UNFORM
** TEMPLATE USERDEFINED
** AERMODEXE  AERMOD_BREEZE_15181.EXE
** AERMAPEXE  AERMAP_EPA_11103.EXE


 ***********************************
 *** SETUP Finishes Successfully ***
```

```
 **********************************

↑ *** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                   ***
    05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
   14:05:24

   PAGE   1
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL

                                           ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **PARTICLE DEPOSITION Data Provided.
 **Model Uses DRY DEPLETION.     DDPLETE  =  T
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.

 **Other Options Specified:
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM10

 **Model Calculates  2 Short Term Average(s) of:   1-HR  24-HR
     and Calculates ANNUAL Averages

 **This Run Includes:      1 Source(s);       1 Source Group(s); and     176 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:      0 VOLUME source(s)
                and:      1 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 OPENPIT source(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     5.00 ;  Decay Coef. =    0.000     ;  Rot. Angle
=     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =
```

```
0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Input Runstream File:          AERMOD.INP

 **Output Print File:             AERMOD.OUT


↑ *** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                    ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
   14:05:24

   PAGE   2
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL


                                                *** AREAPOLY SOURCE DATA ***

               NUMBER EMISSION RATE   LOCATION OF AREA  BASE     RELEASE  NUMBER      INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC       X        Y      ELEV.    HEIGHT  OF VERTS.     SZ     SOURCE  SCALAR VARY
     ID         CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS)            (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

 FUDT901U         3   0.28800E-06  468475.7 3780849.0     0.0     3.00       4         1.00     NO
↑ *** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                    ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
   14:05:24

   PAGE   3
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL


                                            *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                            SOURCE IDs
 -----------                                            ----------


  ALL        FUDT901U    ,
↑ *** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                    ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
   14:05:24

   PAGE   4
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL

                                                *** SOURCE PARTICULATE/GAS DATA ***



        *** SOURCE ID = FUDT901U    ; SOURCE TYPE = AREAPOLY ***

        MASS FRACTION =
            0.07870,   0.12920,   0.79220,

        PARTICLE DIAMETER (MICRONS) =
            1.00000,   2.50000,  10.00000,

        PARTICLE DENSITY (G/CM**3)  =
            2.30000,   2.30000,   2.30000,
```

**MODELOPTs: RegDFAULT CONC ELEV DRYDPLT RURAL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(468480.2, 3780884.3, 1.5, 0.0, 0.0); (468540.9, 3780804.8, 1.5, 0.0, 0.0);
(468595.5, 3780733.2, 1.5, 0.0, 0.0); (468587.4, 3780727.3, 1.5, 0.0, 0.0);
(468506.6, 3780668.3, 1.5, 0.0, 0.0); (468425.9, 3780609.3, 1.5, 0.0, 0.0);
(468419.6, 3780604.8, 1.5, 0.0, 0.0); (468363.0, 3780677.7, 1.5, 0.0, 0.0);
(468307.5, 3780749.3, 1.5, 0.0, 0.0); (468314.9, 3780755.0, 1.5, 0.0, 0.0);
(468393.7, 3780816.6, 1.5, 0.0, 0.0); (468472.5, 3780878.2, 1.5, 0.0, 0.0);
(468493.9, 3780990.1, 1.5, 0.0, 0.0); (468554.5, 3780910.6, 1.5, 0.0, 0.0);
(468615.1, 3780831.1, 1.5, 0.0, 0.0); (468675.8, 3780751.5, 1.5, 0.0, 0.0);
(468701.5, 3780717.7, 1.5, 0.0, 0.0); (468655.1, 3780683.8, 1.5, 0.0, 0.0);
(468574.3, 3780624.9, 1.5, 0.0, 0.0); (468493.6, 3780565.9, 1.5, 0.0, 0.0);
(468412.8, 3780506.9, 1.5, 0.0, 0.0); (468405.1, 3780501.3, 1.5, 0.0, 0.0);
(468349.6, 3780572.7, 1.5, 0.0, 0.0); (468288.3, 3780651.7, 1.5, 0.0, 0.0);
(468226.9, 3780730.7, 1.5, 0.0, 0.0); (468202.4, 3780762.3, 1.5, 0.0, 0.0);
(468249.6, 3780799.2, 1.5, 0.0, 0.0); (468328.4, 3780860.8, 1.5, 0.0, 0.0);
(468407.2, 3780922.4, 1.5, 0.0, 0.0); (468486.0, 3780984.0, 1.5, 0.0, 0.0);
(468512.0, 3781131.2, 1.5, 0.0, 0.0); (468572.7, 3781051.7, 1.5, 0.0, 0.0);
(468633.3, 3780972.2, 1.5, 0.0, 0.0); (468693.9, 3780892.7, 1.5, 0.0, 0.0);
(468754.5, 3780813.1, 1.5, 0.0, 0.0); (468815.2, 3780733.6, 1.5, 0.0, 0.0);
(468843.0, 3780697.2, 1.5, 0.0, 0.0); (468799.2, 3780665.2, 1.5, 0.0, 0.0);
(468718.4, 3780606.3, 1.5, 0.0, 0.0); (468637.7, 3780547.3, 1.5, 0.0, 0.0);
(468556.9, 3780488.3, 1.5, 0.0, 0.0); (468476.1, 3780429.4, 1.5, 0.0, 0.0);
(468395.4, 3780370.4, 1.5, 0.0, 0.0); (468385.6, 3780363.3, 1.5, 0.0, 0.0);
(468331.7, 3780432.7, 1.5, 0.0, 0.0); (468270.4, 3780511.7, 1.5, 0.0, 0.0);
(468209.0, 3780590.7, 1.5, 0.0, 0.0); (468147.7, 3780669.7, 1.5, 0.0, 0.0);
(468086.4, 3780748.7, 1.5, 0.0, 0.0); (468062.3, 3780779.7, 1.5, 0.0, 0.0);
(468110.1, 3780817.1, 1.5, 0.0, 0.0); (468188.9, 3780878.7, 1.5, 0.0, 0.0);
(468267.7, 3780940.2, 1.5, 0.0, 0.0); (468346.5, 3781001.8, 1.5, 0.0, 0.0);
(468425.2, 3781063.4, 1.5, 0.0, 0.0); (468504.0, 3781125.0, 1.5, 0.0,

```
0.0);
( 468566.5, 3781554.6,       1.5,       0.0,       0.0);         ( 468657.5, 3781435.3,       1.5,       0.0,
0.0);
( 468687.8, 3781395.6,       1.5,       0.0,       0.0);         ( 468687.8, 3781395.6,       1.5,       0.0,
0.0);
( 468718.1, 3781355.7,       1.5,       0.0,       0.0);         ( 468778.7, 3781276.2,       1.5,       0.0,
0.0);
( 468809.0, 3781236.5,       1.5,       0.0,       0.0);         ( 468839.3, 3781196.7,       1.5,       0.0,
0.0);
( 468869.6, 3781157.0,       1.5,       0.0,       0.0);         ( 468869.7, 3781156.9,       1.5,       0.0,
0.0);
( 468900.0, 3781117.2,       1.5,       0.0,       0.0);         ( 468930.3, 3781077.4,       1.5,       0.0,
0.0);
( 468960.6, 3781037.7,       1.5,       0.0,       0.0);         ( 469021.2, 3780958.1,       1.5,       0.0,
0.0);
( 469051.6, 3780918.4,       1.5,       0.0,       0.0);         ( 469112.1, 3780838.9,       1.5,       0.0,
0.0);
( 469112.2, 3780838.8,       1.5,       0.0,       0.0);         ( 469142.5, 3780799.1,       1.5,       0.0,
0.0);
( 469172.8, 3780759.3,       1.5,       0.0,       0.0);         ( 469203.1, 3780719.6,       1.5,       0.0,
0.0);
( 469263.8, 3780640.0,       1.5,       0.0,       0.0);         ( 469267.2, 3780635.5,       1.5,       0.0,
0.0);
( 469231.5, 3780609.4,       1.5,       0.0,       0.0);         ( 469069.9, 3780491.4,       1.5,       0.0,
0.0);
( 469029.6, 3780462.0,       1.5,       0.0,       0.0);         ( 468908.4, 3780373.5,       1.5,       0.0,
0.0);
( 468868.0, 3780344.0,       1.5,       0.0,       0.0);         ( 468787.3, 3780285.1,       1.5,       0.0,
0.0);
( 468746.9, 3780255.6,       1.5,       0.0,       0.0);         ( 468625.7, 3780167.1,       1.5,       0.0,
0.0);
( 468585.3, 3780137.7,       1.5,       0.0,       0.0);         ( 468545.0, 3780108.2,       1.5,       0.0,
0.0);
( 468423.8, 3780019.7,       1.5,       0.0,       0.0);         ( 468383.4, 3779990.2,       1.5,       0.0,
0.0);
*** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                    ***
05/05/16
*** AERMET - VERSION  14134 ***   ***                                                                   ***
14:05:24

PAGE   6
**MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL

                                   *** DISCRETE CARTESIAN RECEPTORS ***
                                (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                              (METERS)

( 468327.3, 3779949.3,       1.5,       0.0,       0.0);         ( 468308.6, 3779973.3,       1.5,       0.0,
0.0);
( 468277.9, 3780012.8,       1.5,       0.0,       0.0);         ( 468277.9, 3780012.9,       1.5,       0.0,
0.0);
( 468277.9, 3780012.9,       1.5,       0.0,       0.0);         ( 468247.3, 3780052.3,       1.5,       0.0,
0.0);
( 468216.6, 3780091.9,       1.5,       0.0,       0.0);         ( 468185.9, 3780131.3,       1.5,       0.0,
0.0);
( 468155.3, 3780170.8,       1.5,       0.0,       0.0);         ( 468155.3, 3780170.8,       1.5,       0.0,
0.0);
( 468155.2, 3780170.9,       1.5,       0.0,       0.0);         ( 468063.3, 3780289.3,       1.5,       0.0,
0.0);
( 468032.6, 3780328.8,       1.5,       0.0,       0.0);         ( 468001.9, 3780368.2,       1.5,       0.0,
0.0);
( 467971.3, 3780407.7,       1.5,       0.0,       0.0);         ( 467971.2, 3780407.8,       1.5,       0.0,
0.0);
( 467909.9, 3780486.7,       1.5,       0.0,       0.0);         ( 467909.9, 3780486.7,       1.5,       0.0,
0.0);
( 467909.9, 3780486.8,       1.5,       0.0,       0.0);         ( 467879.3, 3780526.2,       1.5,       0.0,
0.0);
```

```
( 467848.6, 3780565.8,       1.5,       0.0,       0.0);         ( 467817.9, 3780605.2,       1.5,       0.0,
0.0);
( 467787.3, 3780644.7,       1.5,       0.0,       0.0);         ( 467787.3, 3780644.7,       1.5,       0.0,
0.0);
( 467787.2, 3780644.8,       1.5,       0.0,       0.0);         ( 467695.3, 3780763.2,       1.5,       0.0,
0.0);
( 467664.6, 3780802.7,       1.5,       0.0,       0.0);         ( 467641.9, 3780831.9,       1.5,       0.0,
0.0);
( 467652.1, 3780839.9,       1.5,       0.0,       0.0);         ( 467691.6, 3780870.7,       1.5,       0.0,
0.0);
( 467770.3, 3780932.3,       1.5,       0.0,       0.0);         ( 467770.3, 3780932.3,       1.5,       0.0,
0.0);
( 467809.7, 3780963.1,       1.5,       0.0,       0.0);         ( 467849.1, 3780993.8,       1.5,       0.0,
0.0);
( 467849.2, 3780993.9,       1.5,       0.0,       0.0);         ( 467888.5, 3781024.6,       1.5,       0.0,
0.0);
( 467927.8, 3781055.4,       1.5,       0.0,       0.0);         ( 467927.9, 3781055.5,       1.5,       0.0,
0.0);
( 467927.9, 3781055.5,       1.5,       0.0,       0.0);         ( 468085.4, 3781178.7,       1.5,       0.0,
0.0);
( 468085.5, 3781178.7,       1.5,       0.0,       0.0);         ( 468164.2, 3781240.2,       1.5,       0.0,
0.0);
( 468164.3, 3781240.3,       1.5,       0.0,       0.0);         ( 468203.6, 3781270.9,       1.5,       0.0,
0.0);
( 468243.1, 3781301.8,       1.5,       0.0,       0.0);         ( 468243.1, 3781301.8,       1.5,       0.0,
0.0);
( 468400.6, 3781424.9,       1.5,       0.0,       0.0);         ( 468400.7, 3781425.0,       1.5,       0.0,
0.0);
( 468479.5, 3781486.5,       1.5,       0.0,       0.0);         ( 468518.8, 3781517.3,       1.5,       0.0,
0.0);
( 468558.2, 3781548.0,       1.5,       0.0,       0.0);         ( 468558.2, 3781548.0,       1.5,       0.0,
0.0);
( 468558.3, 3781548.1,       1.5,       0.0,       0.0);         ( 467770.3, 3780932.3,       1.5,       0.0,
0.0);
( 467809.7, 3780963.1,       1.5,       0.0,       0.0);         ( 467849.1, 3780993.8,       1.5,       0.0,
0.0);
( 467849.2, 3780993.9,       1.5,       0.0,       0.0);         ( 467888.5, 3781024.6,       1.5,       0.0,
0.0);
( 467927.8, 3781055.4,       1.5,       0.0,       0.0);         ( 467927.9, 3781055.5,       1.5,       0.0,
0.0);
( 468006.7, 3781117.1,       1.5,       0.0,       0.0);         ( 468085.5, 3781178.7,       1.5,       0.0,
0.0);
( 468164.2, 3781240.2,       1.5,       0.0,       0.0);         ( 468164.3, 3781240.3,       1.5,       0.0,
0.0);
( 468203.6, 3781270.9,       1.5,       0.0,       0.0);         ( 468243.1, 3781301.8,       1.5,       0.0,
0.0);
( 468321.9, 3781363.4,       1.5,       0.0,       0.0);         ( 468400.7, 3781425.0,       1.5,       0.0,
0.0);
( 468479.5, 3781486.5,       1.5,       0.0,       0.0);         ( 468518.8, 3781517.3,       1.5,       0.0,
0.0);
( 468558.2, 3781548.0,       1.5,       0.0,       0.0);         ( 468558.3, 3781548.1,       1.5,       0.0,
0.0);
( 468484.8, 3780919.6,       1.5,       0.0,       0.0);         ( 468545.4, 3780840.0,       1.5,       0.0,
0.0);
( 468606.0, 3780760.5,       1.5,       0.0,       0.0);         ( 468630.8, 3780728.0,       1.5,       0.0,
0.0);
( 468583.0, 3780693.1,       1.5,       0.0,       0.0);         ( 468502.3, 3780634.2,       1.5,       0.0,
0.0);
( 468421.5, 3780575.2,       1.5,       0.0,       0.0);         ( 468414.8, 3780570.3,       1.5,       0.0,
0.0);
( 468358.6, 3780642.7,       1.5,       0.0,       0.0);         ( 468297.2, 3780721.7,       1.5,       0.0,
0.0);
( 468272.4, 3780753.6,       1.5,       0.0,       0.0);         ( 468319.4, 3780790.3,       1.5,       0.0,
0.0);
( 468398.2, 3780851.9,       1.5,       0.0,       0.0);         ( 468477.0, 3780913.4,       1.5,       0.0,
0.0);
```

```
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
   14:05:24

   PAGE   7
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL

                                          *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                              (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                      METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2010   1  1  1
                                                          AND END DATE: 2011  12 31 24

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA
FILE.


                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                             (METERS/SEC)

                                                  1.54,   3.09,   5.14,   8.23,  10.80,
 *** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                        ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
   14:05:24

   PAGE   8
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL

                                     *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.SFC                    Met Version:
14134
   Profile file:   C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:        0                  Upper air station no.:     3190
                  Name: UNKNOWN                                    Name: UNKNOWN
                  Year:   2007                                     Year:   2007

 First 24 hours of scalar data
 YR MO DY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN  Z0 BOWEN  ALB  REF WS   WD   HT  REF TA  HT IPCOD
PRATE  RH SFCP CCVR
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - -
 07 01 01 01   -0.5  0.030 -9.000 -9.000 -999.   12.      4.4 0.32 1.00 1.00    0.50   27.   9.  279.9   6.***
-9.00  999.  977. 10
 07 01 01 02   -0.5  0.030 -9.000 -9.000 -999.   12.      4.3 0.32 1.00 1.00    0.50    7.   9.  279.2   6.***
```

```
-9.00  999.  977. 10
 07 01 01 03   -0.5  0.030 -9.000 -9.000 -999.   12.      4.3 0.32 1.00 1.00    0.50   97.   9.  278.8   6.***
-9.00  999.  977. 10
 07 01 01 04   -0.7  0.030 -9.000 -9.000 -999.   12.      3.1 0.32 1.00 1.00    0.50  148.   9.  278.1   6.***
-9.00  999.  977.  0
 07 01 01 05   -2.4  0.054 -9.000 -9.000 -999.   30.      5.5 0.32 1.00 1.00    0.90   87.   9.  278.1   6.***
-9.00  999.  977.  0
 07 01 01 06   -1.7  0.054 -9.000 -9.000 -999.   30.      7.8 0.32 1.00 1.00    0.90  208.   9.  277.0   6.***
-9.00  999.  977. 10
 07 01 01 07   -1.7  0.054 -9.000 -9.000 -999.   30.      7.8 0.32 1.00 1.00    0.90  156.   9.  277.5   6.***
-9.00  999.  977. 10
 07 01 01 08   -1.7  0.054 -9.000 -9.000 -999.   30.      7.8 0.32 1.00 0.52    0.90   60.   9.  277.5   6.***
-9.00  999.  977.  6
 07 01 01 09   34.6  0.390  0.621  0.005  241.  585.   -149.6 0.32 1.00 0.31    3.10  264.   9.  282.5   6.***
-9.00  999.  977.  4
 07 01 01 10   78.0  0.267  1.066  0.005  541.  341.    -21.3 0.32 1.00 0.24    1.80  242.   9.  289.2   6.***
-9.00  999.  977.  0
 07 01 01 11  112.9  0.612  1.395  0.019  839. 1149.   -176.9 0.32 1.00 0.21    4.90   82.   9.  290.4   6.***
-9.00  999.  977.  0
 07 01 01 12  130.3  0.615  1.611  0.020 1120. 1158.   -155.8 0.32 1.00 0.20    4.90   74.   9.  290.9   6.***
-9.00  999.  977.  0
 07 01 01 13  128.2  0.671  1.662  0.015 1250. 1315.   -204.9 0.32 1.00 0.20    5.40   59.   9.  290.9   6.***
-9.00  999.  977.  0
 07 01 01 14  107.5  0.712  1.575  0.007 1267. 1439.   -292.1 0.32 1.00 0.22    5.80   58.   9.  291.4   6.***
-9.00  999.  977.  0
 07 01 01 15   68.1  0.602  1.356  0.021 1277. 1137.   -279.3 0.32 1.00 0.25    4.90   40.   9.  291.4   6.***
-9.00  999.  977.  0
 07 01 01 16   18.1  0.438  0.872  0.021 1278.  724.   -405.7 0.32 1.00 0.34    3.60  312.   9.  292.0   6.***
-9.00  999.  977.  0
 07 01 01 17  -25.8  0.263 -9.000 -9.000 -999.  353.     61.6 0.32 1.00 0.63    2.70  342.   9.  290.9   6.***
-9.00  999.  977.  0
 07 01 01 18   -4.9  0.077 -9.000 -9.000 -999.  114.      8.1 0.32 1.00 1.00    1.30  256.   9.  289.2   6.***
-9.00  999.  977.  0
 07 01 01 19   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1 0.32 1.00 1.00    1.30  191.   9.  289.9   6.***
-9.00  999.  977.  0
 07 01 01 20   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1 0.32 1.00 1.00    1.30  197.   9.  289.9   6.***
-9.00  999.  977.  0
 07 01 01 21   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1 0.32 1.00 1.00    1.30  190.   9.  289.9   6.***
-9.00  999.  977.  0
 07 01 01 22   -2.4  0.054 -9.000 -9.000 -999.   30.      5.6 0.32 1.00 1.00    0.90  188.   9.  289.2   6.***
-9.00  999.  977.  0
 07 01 01 23   -9.5  0.107 -9.000 -9.000 -999.   84.     11.3 0.32 1.00 1.00    1.80  162.   9.  289.9   6.***
-9.00  999.  977.  0
 07 01 01 24   -9.5  0.107 -9.000 -9.000 -999.   84.     11.3 0.32 1.00 1.00    1.80   42.   9.  289.2   6.***
-9.00  999.  977.  0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 07 01 01 01    5.5 0 -999.  -99.00   279.9   99.0  -99.00  -99.00
 07 01 01 01    9.1 1   27.    0.50  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
 *** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                          ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                          ***
   14:05:24

   PAGE   9
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL

                    *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   2 YEARS FOR SOURCE GROUP: ALL
 ***
                                  INCLUDING SOURCE(S):     FUDT901U    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***
```

Attach C - 150K LST PM10 mitigated concentric
** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
468480.20	3780884.30	1.25085	468540.90	3780804.80	2.32366
468595.50	3780733.20	0.49359	468587.40	3780727.30	0.52601
468506.60	3780668.30	1.16307	468425.90	3780609.30	1.40058
468419.60	3780604.80	1.37749	468363.00	3780677.70	2.79400
468307.50	3780749.30	1.22338	468314.90	3780755.00	1.30396
468393.70	3780816.60	1.70914	468472.50	3780878.20	1.29622
468493.90	3780990.10	0.34619	468554.50	3780910.60	1.01231
468615.10	3780831.10	0.82589	468675.80	3780751.50	0.19703
468701.50	3780717.70	0.11880	468655.10	3780683.80	0.14779
468574.30	3780624.90	0.23881	468493.60	3780565.90	0.36355
468412.80	3780506.90	0.42882	468405.10	3780501.30	0.42718
468349.60	3780572.70	0.99136	468288.30	3780651.70	1.03660
468226.90	3780730.70	0.50333	468202.40	3780762.30	0.37243
468249.60	3780799.20	0.47235	468328.40	3780860.80	0.49639
468407.20	3780922.40	0.38672	468486.00	3780984.00	0.34872
468512.00	3781131.20	0.12489	468572.70	3781051.70	0.29280
468633.30	3780972.20	0.51367	468693.90	3780892.70	0.37851
468754.50	3780813.10	0.14524	468815.20	3780733.60	0.05751
468843.00	3780697.20	0.04247	468799.20	3780665.20	0.04827
468718.40	3780606.30	0.06649	468637.70	3780547.30	0.09310
468556.90	3780488.30	0.11459	468476.10	3780429.40	0.14058
468395.40	3780370.40	0.16152	468385.60	3780363.30	0.16218
468331.70	3780432.70	0.31423	468270.40	3780511.70	0.47365
468209.00	3780590.70	0.44149	468147.70	3780669.70	0.28319
468086.40	3780748.70	0.17191	468062.30	3780779.70	0.14384
468110.10	3780817.10	0.17275	468188.90	3780878.70	0.20226
468267.70	3780940.20	0.18388	468346.50	3781001.80	0.14513
468425.20	3781063.40	0.12552	468504.00	3781125.00	0.12509
468566.50	3781554.60	0.02629	468657.50	3781435.30	0.04740
468687.80	3781395.60	0.05952	468687.80	3781395.60	0.05952
468718.10	3781355.70	0.07551	468778.70	3781276.20	0.11506

468809.00	3781236.50	0.13064	468839.30	3781196.70	0.13631
468869.60	3781157.00	0.13055	468869.70	3781156.90	0.13051
468900.00	3781117.20	0.11683	468930.30	3781077.40	0.10007
468960.60	3781037.70	0.08285	469021.20	3780958.10	0.05072
469051.60	3780918.40	0.03825	469112.10	3780838.90	0.02242
469112.20	3780838.80	0.02240	469142.50	3780799.10	0.01772
469172.80	3780759.30	0.01441	469203.10	3780719.60	0.01212
469263.80	3780640.00	0.00934	469267.20	3780635.50	0.00923
469231.50	3780609.40	0.00973	469069.90	3780491.40	0.01225

*** AERMOD - VERSION 15181 *** *** PM10 Mitigated ***
05/05/16
*** AERMET - VERSION 14134 *** *** ***
14:05:24

PAGE 10
**MODELOPTs: RegDFAULT CONC ELEV DRYDPLT RURAL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 2 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
469029.60	3780462.00	0.01338	468908.40	3780373.50	0.01772
468868.00	3780344.00	0.01926	468787.30	3780285.10	0.02193
468746.90	3780255.60	0.02269	468625.70	3780167.10	0.02374
468585.30	3780137.70	0.02463	468545.00	3780108.20	0.02602
468423.80	3780019.70	0.03139	468383.40	3779990.20	0.03295
468327.30	3779949.30	0.03476	468308.60	3779973.30	0.03941
468277.90	3780012.80	0.04846	468277.90	3780012.90	0.04848
468277.90	3780012.90	0.04848	468247.30	3780052.30	0.05907
468216.60	3780091.90	0.07074	468185.90	3780131.30	0.08250
468155.30	3780170.80	0.09319	468155.30	3780170.80	0.09319
468155.20	3780170.90	0.09321	468063.30	3780289.30	0.10786
468032.60	3780328.80	0.10788	468001.90	3780368.20	0.10659
467971.30	3780407.70	0.10306	467971.20	3780407.80	0.10304
467909.90	3780486.70	0.08688	467909.90	3780486.70	0.08688
467909.90	3780486.80	0.08688	467879.30	3780526.20	0.07692

467848.60	3780565.80	0.06764	467817.90	3780605.20	0.05945
467787.30	3780644.70	0.05242	467787.30	3780644.70	0.05242
467787.20	3780644.80	0.05240	467695.30	3780763.20	0.03825
467664.60	3780802.70	0.03485	467641.90	3780831.90	0.03248
467652.10	3780839.90	0.03308	467691.60	3780870.70	0.03537
467770.30	3780932.30	0.03972	467770.30	3780932.30	0.03972
467809.70	3780963.10	0.04163	467849.10	3780993.80	0.04304
467849.20	3780993.90	0.04304	467888.50	3781024.60	0.04354
467927.80	3781055.40	0.04295	467927.90	3781055.50	0.04294
467927.90	3781055.50	0.04294	468085.40	3781178.70	0.03632
468085.50	3781178.70	0.03632	468164.20	3781240.20	0.03294
468164.30	3781240.30	0.03294	468203.60	3781270.90	0.03106
468243.10	3781301.80	0.02885	468243.10	3781301.80	0.02885
468400.60	3781424.90	0.02426	468400.70	3781425.00	0.02426
468479.50	3781486.50	0.02548	468518.80	3781517.30	0.02599
468558.20	3781548.00	0.02627	468558.20	3781548.00	0.02627
468558.30	3781548.10	0.02627	467770.30	3780932.30	0.03972
467809.70	3780963.10	0.04163	467849.10	3780993.80	0.04304
467849.20	3780993.90	0.04304	467888.50	3781024.60	0.04354
467927.80	3781055.40	0.04295	467927.90	3781055.50	0.04294
468006.70	3781117.10	0.03982	468085.50	3781178.70	0.03632
468164.20	3781240.20	0.03294	468164.30	3781240.30	0.03294
468203.60	3781270.90	0.03106	468243.10	3781301.80	0.02885
468321.90	3781363.40	0.02496	468400.70	3781425.00	0.02426
468479.50	3781486.50	0.02548	468518.80	3781517.30	0.02599

*** AERMOD - VERSION 15181 *** *** PM10 Mitigated ***
05/05/16
*** AERMET - VERSION 14134 *** *** ***
14:05:24

PAGE 11
**MODELOPTs: RegDFAULT CONC ELEV DRYDPLT RURAL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 2 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC

- -

468558.20	3781548.00	0.02627	468558.30	3781548.10	0.02627
468484.80	3780919.60	0.74715	468545.40	3780840.00	1.84275
468606.00	3780760.50	0.59438	468630.80	3780728.00	0.27088
468583.00	3780693.10	0.37660	468502.30	3780634.20	0.73083
468421.50	3780575.20	0.87859	468414.80	3780570.30	0.86658
468358.60	3780642.70	2.03572	468297.20	3780721.70	1.20178
468272.40	3780753.60	0.75788	468319.40	3780790.30	0.98548
468398.20	3780851.90	0.97962	468477.00	3780913.40	0.76493

↑ *** AERMOD - VERSION 15181 *** *** PM10 Mitigated *** 05/05/16
*** AERMET - VERSION 14134 *** *** *** 14:05:24

PAGE 12
**MODELOPTs: RegDFAULT CONC ELEV DRYDPLT RURAL

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
468480.20	3780884.30	21.23312	(10013020)	468540.90	3780804.80	22.36715	(10020322)
468595.50	3780733.20	21.15221	(10040201)	468587.40	3780727.30	21.78214	(10112302)
468506.60	3780668.30	19.82612	(11122104)	468425.90	3780609.30	21.78441	(11103022)
468419.60	3780604.80	21.38500	(11072003)	468363.00	3780677.70	22.37284	(10091905)
468307.50	3780749.30	21.37934	(10120517)	468314.90	3780755.00	21.88041	(10080203)
468393.70	3780816.60	19.86023	(11022705)	468472.50	3780878.20	21.75181	(11101021)
468493.90	3780990.10	10.56384	(11080702)	468554.50	3780910.60	14.47245	(11081504)
468615.10	3780831.10	14.87621	(10091201)	468675.80	3780751.50	12.47616	(11090402)
468701.50	3780717.70	10.53830	(10040201)	468655.10	3780683.80	12.34731	(11092805)
468574.30	3780624.90	13.20367	(10122702)	468493.60	3780565.90	13.19046	(10021222)
468412.80	3780506.90	11.12616	(10091204)	468405.10	3780501.30	10.77898	(10050303)
468349.60	3780572.70	14.40532	(11101802)	468288.30	3780651.70	14.90368	(11050503)
468226.90	3780730.70	12.55001	(11101801)	468202.40	3780762.30	10.68572	(10050801)
468249.60	3780799.20	12.61362	(10083101)	468328.40	3780860.80	13.22627	(11022705)
468407.20	3780922.40	13.13916	(10091202)	468486.00	3780984.00	10.92562	

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(11031123)
        468512.00   3781131.20        5.39646  (11080702)                468572.70   3781051.70        7.18749
(10071303)
        468633.30   3780972.20        8.59873  (11050323)                468693.90   3780892.70        8.85567
(11080705)
        468754.50   3780813.10        7.92865  (11030324)                468815.20   3780733.60        6.17371
(11110520)
        468843.00   3780697.20        5.37719  (10040201)                468799.20   3780665.20        6.17672
(10050802)
        468718.40   3780606.30        7.48565  (10082404)                468637.70   3780547.30        8.05845
(10122702)
        468556.90   3780488.30        7.98602  (10092304)                468476.10   3780429.40        7.20394
(11050504)
        468395.40   3780370.40        5.73878  (10091204)                468385.60   3780363.30        5.54991
(11103022)
        468331.70   3780432.70        7.15985  (11120704)                468270.40   3780511.70        8.58242
(10091602)
        468209.00   3780590.70        8.85632  (10091404)                468147.70   3780669.70        7.93209
(10091724)
        468086.40   3780748.70        6.16118  (11050502)                468062.30   3780779.70        5.47165
(10081404)
        468110.10   3780817.10        6.40906  (10061504)                468188.90   3780878.70        7.65722
(10091524)
        468267.70   3780940.20        8.08081  (11042903)                468346.50   3781001.80        7.93144
(11101824)
        468425.20   3781063.40        7.03792  (11090305)                468504.00   3781125.00        5.54713
(11101021)
        468566.50   3781554.60        1.68066  (11101021)                468657.50   3781435.30        2.05531
(11071703)
        468687.80   3781395.60        2.19689  (10062303)                468687.80   3781395.60        2.19689
(10062303)
        468718.10   3781355.70        2.33252  (11110424)                468778.70   3781276.20        2.59915
(11050523)
        468809.00   3781236.50        2.71764  (11062804)                468839.30   3781196.70        2.80764
(11111221)
        468869.60   3781157.00        2.86839  (11081402)                468869.70   3781156.90        2.86880
(11081402)
        468900.00   3781117.20        2.91237  (11071702)                468930.30   3781077.40        2.91393
(11081505)
        468960.60   3781037.70        2.88066  (11051223)                469021.20   3780958.10        2.71997
(10051204)
        469051.60   3780918.40        2.58423  (11083001)                469112.10   3780838.90        2.34261
(11090406)
        469112.20   3780838.80        2.34222  (11090406)                469142.50   3780799.10        2.19668
(11011220)
        469172.80   3780759.30        2.06400  (11090402)                469203.10   3780719.60        1.93094
(11110520)
        469263.80   3780640.00        1.68307  (10040201)                469267.20   3780635.50        1.66571
(10040201)
        469231.50   3780609.40        1.75955  (10112302)                469069.90   3780491.40        2.22446
(11080103)
 *** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                    ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
   14:05:24

   PAGE  13
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL
 ***
                                  INCLUDING SOURCE(S):     FUDT901U    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM10     IN MICROGRAMS/M**3                          **
```

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
469029.60	3780462.00	2.38694	(11081705)	468908.40	3780373.50	2.68727	(11030401)
468868.00	3780344.00	2.75085	(10052902)	468787.30	3780285.10	2.80391	(11030921)
468746.90	3780255.60	2.79131	(11032901)	468625.70	3780167.10	2.60715	(11111404)
468585.30	3780137.70	2.50420	(11080403)	468545.00	3780108.20	2.38890	(11031803)
468423.80	3780019.70	2.01892	(11050402)	468383.40	3779990.20	1.89543	(10040224)
468327.30	3779949.30	1.73151	(11103022)	468308.60	3779973.30	1.80252	(10050303)
468277.90	3780012.80	1.93114	(11051903)	468277.90	3780012.90	1.93151	(11051903)
468277.90	3780012.90	1.93151	(11051903)	468247.30	3780052.30	2.06341	(11070105)
468216.60	3780091.90	2.21285	(11120704)	468185.90	3780131.30	2.34034	(11090405)
468155.30	3780170.80	2.47821	(10061502)	468155.30	3780170.80	2.47821	(10061502)
468155.20	3780170.90	2.47834	(10061502)	468063.30	3780289.30	2.80855	(10092503)
468032.60	3780328.80	2.87670	(10091104)	468001.90	3780368.20	2.90958	(10050423)
467971.30	3780407.70	2.90874	(11071804)	467971.20	3780407.80	2.90853	(11071804)
467909.90	3780486.70	2.80098	(11062702)	467909.90	3780486.70	2.80098	(11062702)
467909.90	3780486.80	2.80142	(11062702)	467879.30	3780526.20	2.70812	(11100922)
467848.60	3780565.80	2.59050	(10040824)	467817.90	3780605.20	2.46253	(11070103)
467787.30	3780644.70	2.32398	(10032422)	467787.30	3780644.70	2.32398	(10032422)
467787.20	3780644.80	2.32364	(10032422)	467695.30	3780763.20	1.91350	(10090303)
467664.60	3780802.70	1.78746	(10090101)	467641.90	3780831.90	1.70026	(10081404)
467652.10	3780839.90	1.73135	(10080203)	467691.60	3780870.70	1.84542	(10041703)
467770.30	3780932.30	2.09272	(11051301)	467770.30	3780932.30	2.09272	(11051301)
467809.70	3780963.10	2.22168	(11051302)	467849.10	3780993.80	2.34463	(10081204)
467849.20	3780993.90	2.34499	(10081204)	467888.50	3781024.60	2.46208	(10051305)
467927.80	3781055.40	2.56956	(10091904)	467927.90	3781055.50	2.56974	(10091904)
467927.90	3781055.50	2.56974	(10091904)	468085.40	3781178.70	2.80274	(11093004)
468085.50	3781178.70	2.80320	(11093004)	468164.20	3781240.20	2.76968	(10090505)
468164.30	3781240.30	2.76947	(10090505)	468203.60	3781270.90	2.71487	(11080704)
468243.10	3781301.80	2.63570	(10111504)	468243.10	3781301.80	2.63570	(10111504)
468400.60	3781424.90	2.18786	(11091801)	468400.70	3781425.00	2.18755	(11091801)
468479.50	3781486.50	1.93951	(10050805)	468518.80	3781517.30	1.81880	(11090905)
468558.20	3781548.00	1.70015	(11101021)	468558.20	3781548.00	1.70015	(11101021)
468558.30	3781548.10	1.69989	(11101021)	467770.30	3780932.30	2.09272	

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(11051301)
       467809.70   3780963.10       2.22168  (11051302)              467849.10   3780993.80       2.34463
(10081204)
       467849.20   3780993.90       2.34499  (10081204)              467888.50   3781024.60       2.46208
(10051305)
       467927.80   3781055.40       2.56956  (10091904)              467927.90   3781055.50       2.56974
(10091904)
       468006.70   3781117.10       2.73293  (11022705)              468085.50   3781178.70       2.80320
(11093004)
       468164.20   3781240.20       2.76968  (10090505)              468164.30   3781240.30       2.76947
(10090505)
       468203.60   3781270.90       2.71487  (11080704)              468243.10   3781301.80       2.63570
(10111504)
       468321.90   3781363.40       2.42305  (10071704)              468400.70   3781425.00       2.18755
(11091801)
       468479.50   3781486.50       1.93951  (10050805)              468518.80   3781517.30       1.81880
(11090905)
 *** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                    ***
    05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
   14:05:24

   PAGE  14
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL

                          *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL
 ***
                              INCLUDING SOURCE(S):     FUDT901U    ,

                                         *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                    ** CONC OF PM10     IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
(YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - -
       468558.20   3781548.00       1.70015  (11101021)              468558.30   3781548.10       1.69989
(11101021)
       468484.80   3780919.60      16.47668  (11080702)              468545.40   3780840.00      20.10670
(11081402)
       468606.00   3780760.50      19.74619  (11051824)              468630.80   3780728.00      16.45779
(10040201)
       468583.00   3780693.10      18.26791  (11020722)              468502.30   3780634.20      17.88586
(11122923)
       468421.50   3780575.20      17.28138  (10091204)              468414.80   3780570.30      16.73507
(10083104)
       468358.60   3780642.70      20.13896  (10100824)              468297.20   3780721.70      19.79403
(11100921)
       468272.40   3780753.60      16.65083  (10090101)              468319.40   3780790.30      18.34230
(10081204)
       468398.20   3780851.90      17.79734  (10061703)              468477.00   3780913.40      17.17238
(11031123)
 *** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                    ***
    05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
   14:05:24

   PAGE  15
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL

                          *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL
 ***
                              INCLUDING SOURCE(S):     FUDT901U    ,

                                         *** DISCRETE CARTESIAN RECEPTOR POINTS ***
```

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
468480.20	3780884.30	5.74705	(11032824)	468540.90	3780804.80	9.01607m	(11081524)
468595.50	3780733.20	2.98145	(11051024)	468587.40	3780727.30	3.27975	(11051024)
468506.60	3780668.30	4.52184m	(10123124)	468425.90	3780609.30	6.69536	(11122624)
468419.60	3780604.80	6.83286	(11122624)	468363.00	3780677.70	10.68635	(11121924)
468307.50	3780749.30	6.69938	(11013024)	468314.90	3780755.00	7.14602	(11013024)
468393.70	3780816.60	6.65298	(11111924)	468472.50	3780878.20	5.83355	(11032824)
468493.90	3780990.10	2.06008	(11032824)	468554.50	3780910.60	4.43638m	(11081524)
468615.10	3780831.10	4.29819m	(11081424)	468675.80	3780751.50	1.56775	(11061224)
468701.50	3780717.70	1.06806	(11051024)	468655.10	3780683.80	1.42069	(11051024)
468574.30	3780624.90	1.65886	(11011024)	468493.60	3780565.90	2.33883m	(10123124)
468412.80	3780506.90	2.56593m	(10123124)	468405.10	3780501.30	2.43759m	(10123124)
468349.60	3780572.70	5.33456	(11122624)	468288.30	3780651.70	4.91900	(11121924)
468226.90	3780730.70	2.89833	(11013024)	468202.40	3780762.30	2.08645	(11013024)
468249.60	3780799.20	3.30486m	(10121824)	468328.40	3780860.80	3.00236	(11111924)
468407.20	3780922.40	2.17441m	(11041424)	468486.00	3780984.00	2.08768	(11032824)
468512.00	3781131.20	0.79943	(11032824)	468572.70	3781051.70	1.45504m	(11081624)
468633.30	3780972.20	2.56528m	(11081524)	468693.90	3780892.70	2.13928m	(11081424)
468754.50	3780813.10	0.92041m	(11111524)	468815.20	3780733.60	0.62233	(11061224)
468843.00	3780697.20	0.43896	(11051024)	468799.20	3780665.20	0.65616	(11111224)
468718.40	3780606.30	0.66339	(11051024)	468637.70	3780547.30	0.82178	(11011024)
468556.90	3780488.30	0.83372	(11012124)	468476.10	3780429.40	1.20243m	(10123124)
468395.40	3780370.40	1.17333m	(10123124)	468385.60	3780363.30	1.09838m	(10123124)
468331.70	3780432.70	1.98230	(11122624)	468270.40	3780511.70	2.52166	(11112724)
468209.00	3780590.70	2.35123	(11121924)	468147.70	3780669.70	1.60973	(11013024)
468086.40	3780748.70	1.01547	(11013024)	468062.30	3780779.70	0.76202	(11013024)
468110.10	3780817.10	1.21596m	(10121824)	468188.90	3780878.70	1.70165m	(10121824)
468267.70	3780940.20	1.44666	(10111524)	468346.50	3781001.80	1.05541m	(11041424)
468425.20	3781063.40	0.81145m	(11041424)	468504.00	3781125.00	0.80759	(11032824)
468566.50	3781554.60	0.19763	(10081724)	468657.50	3781435.30	0.29279	(10070124)
468687.80	3781395.60	0.32294	(11082124)	468687.80	3781395.60	0.32294	(11082124)
468718.10	3781355.70	0.40730	(11062524)	468778.70	3781276.20	0.58795	

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(11090124)
        468809.00   3781236.50        0.63382m (11083124)              468839.30   3781196.70        0.68357m
(11081524)
        468869.60   3781157.00        0.66414m (11081524)              468869.70   3781156.90        0.66401m
(11081524)
        468900.00   3781117.20        0.67094m (11081424)              468930.30   3781077.40        0.56707m
(11081524)
        468960.60   3781037.70        0.44937  (11092024)              469021.20   3780958.10        0.33820m
(11081624)
        469051.60   3780918.40        0.27924m (11081624)              469112.10   3780838.90        0.22693
(11061224)
        469112.20   3780838.80        0.22694  (11061224)              469142.50   3780799.10        0.21984
(11061224)
        469172.80   3780759.30        0.19202  (11061224)              469203.10   3780719.60        0.15787
(11061224)
        469263.80   3780640.00        0.14044m (10102124)              469267.20   3780635.50        0.13953m
(10102124)
        469231.50   3780609.40        0.14327m (10102124)              469069.90   3780491.40        0.17290
(11111224)
↑ *** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                    ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
   14:05:24

   PAGE  16
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL

                             *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL
 ***
                                 INCLUDING SOURCE(S):     FUDT901U    ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                       ** CONC OF PM10     IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
(YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - -
        469029.60   3780462.00        0.18552  (11051024)              468908.40   3780373.50        0.18749
(11030624)
        468868.00   3780344.00        0.21544  (11010324)              468787.30   3780285.10        0.22045
(11021024)
        468746.90   3780255.60        0.22372  (10022024)              468625.70   3780167.10        0.19674m
(11031824)
        468585.30   3780137.70        0.25721m (11031824)              468545.00   3780108.20        0.27147m
(11031824)
        468423.80   3780019.70        0.39204m (10123124)              468383.40   3779990.20        0.36497m
(10123124)
        468327.30   3779949.30        0.28533m (10123124)              468308.60   3779973.30        0.27320m
(10123124)
        468277.90   3780012.80        0.32936  (11111724)              468277.90   3780012.90        0.32946
(11111724)
        468277.90   3780012.90        0.32946  (11111724)              468247.30   3780052.30        0.38576
(11111724)
        468216.60   3780091.90        0.43911  (11122624)              468185.90   3780131.30        0.58562
(11122624)
        468155.30   3780170.80        0.69962  (11122624)              468155.30   3780170.80        0.69962
(11122624)
        468155.20   3780170.90        0.69982  (11122624)              468063.30   3780289.30        0.70027
(11112724)
        468032.60   3780328.80        0.66488  (11112724)              468001.90   3780368.20        0.52719
(11121924)
        467971.30   3780407.70        0.62584  (11121924)              467971.20   3780407.80        0.62594
(11121924)
        467909.90   3780486.70        0.58652  (10121324)              467909.90   3780486.70        0.58652
(10121324)
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        467909.90   3780486.80        0.58650  (10121324)                467879.30   3780526.20        0.46807
(10121324)
        467848.60   3780565.80        0.42408m (10110924)                467817.90   3780605.20        0.43137
(11013024)
        467787.30   3780644.70        0.39726  (11013024)                467787.30   3780644.70        0.39726
(11013024)
        467787.20   3780644.80        0.39710  (11013024)                467695.30   3780763.20        0.24635
(11031424)
        467664.60   3780802.70        0.22465  (11031424)                467641.90   3780831.90        0.19488
(11031424)
        467652.10   3780839.90        0.20238  (11010724)                467691.60   3780870.70        0.27028
(11010724)
        467770.30   3780932.30        0.34787m (10121824)                467770.30   3780932.30        0.34787m
(10121824)
        467809.70   3780963.10        0.42505m (10121824)                467849.10   3780993.80        0.47582m
(10121824)
        467849.20   3780993.90        0.47588m (10121824)                467888.50   3781024.60        0.47677m
(10121824)
        467927.80   3781055.40        0.42061m (10121824)                467927.90   3781055.50        0.42035m
(10121824)
        467927.90   3781055.50        0.42035m (10121824)                468085.40   3781178.70        0.40055
(10111524)
        468085.50   3781178.70        0.40048  (10111524)                468164.20   3781240.20        0.29345m
(11022524)
        468164.30   3781240.30        0.29333m (11022524)                468203.60   3781270.90        0.25844
(11092224)
        468243.10   3781301.80        0.27058  (10030424)                468243.10   3781301.80        0.27058
(10030424)
        468400.60   3781424.90        0.20321m (11041424)                468400.70   3781425.00        0.20310m
(11041424)
        468479.50   3781486.50        0.19817m (11070724)                468518.80   3781517.30        0.18622
(10081724)
        468558.20   3781548.00        0.19822  (10081724)                468558.20   3781548.00        0.19822
(10081724)
        468558.30   3781548.10        0.19821  (10081724)                467770.30   3780932.30        0.34787m
(10121824)
        467809.70   3780963.10        0.42505m (10121824)                467849.10   3780993.80        0.47582m
(10121824)
        467849.20   3780993.90        0.47588m (10121824)                467888.50   3781024.60        0.47677m
(10121824)
        467927.80   3781055.40        0.42061m (10121824)                467927.90   3781055.50        0.42035m
(10121824)
        468006.70   3781117.10        0.37260  (10111524)                468085.50   3781178.70        0.40048
(10111524)
        468164.20   3781240.20        0.29345m (11022524)                468164.30   3781240.30        0.29333m
(11022524)
        468203.60   3781270.90        0.25844  (11092224)                468243.10   3781301.80        0.27058
(10030424)
        468321.90   3781363.40        0.24556m (11041424)                468400.70   3781425.00        0.20310m
(11041424)
        468479.50   3781486.50        0.19817m (11070724)                468518.80   3781517.30        0.18622
(10081724)
♠ *** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                        ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                         ***
   14:05:24

   PAGE  17
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL
 ***
                                  INCLUDING SOURCE(S):     FUDT901U    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM10     IN MICROGRAMS/M**3                          **
```

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
468558.20	3781548.00	0.19822	(10081724)	468558.30	3781548.10	0.19821	(10081724)
468484.80	3780919.60	3.91377	(11032824)	468545.40	3780840.00	8.08234m	(11081524)
468606.00	3780760.50	3.06653	(11061224)	468630.80	3780728.00	2.00342	(11051024)
468583.00	3780693.10	2.60460	(11051024)	468502.30	3780634.20	3.58467m	(10123124)
468421.50	3780575.20	4.49513m	(10123124)	468414.80	3780570.30	4.42008	(11122624)
468358.60	3780642.70	7.79588	(11121924)	468297.20	3780721.70	5.88679	(11013024)
468272.40	3780753.60	4.28192	(11013024)	468319.40	3780790.30	5.63282	(11111924)
468398.20	3780851.90	4.04967	(11092224)	468477.00	3780913.40	3.99482	(11032824)

*** AERMOD - VERSION 15181 *** *** PM10 Mitigated *** 05/05/16
*** AERMET - VERSION 14134 *** *** *** 14:05:24

PAGE 18
**MODELOPTs: RegDFAULT CONC ELEV DRYDPLT RURAL

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 2 YEARS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

NETWORK GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS	2.79400	AT (468363.00, 3780677.70, 1.50, 0.00, 0.00)	DC
	2ND HIGHEST VALUE IS	2.32366	AT (468540.90, 3780804.80, 1.50, 0.00, 0.00)	DC
	3RD HIGHEST VALUE IS	2.03572	AT (468358.60, 3780642.70, 1.50, 0.00, 0.00)	DC
	4TH HIGHEST VALUE IS	1.84275	AT (468545.40, 3780840.00, 1.50, 0.00, 0.00)	DC
	5TH HIGHEST VALUE IS	1.70914	AT (468393.70, 3780816.60, 1.50, 0.00, 0.00)	DC
	6TH HIGHEST VALUE IS	1.40058	AT (468425.90, 3780609.30, 1.50, 0.00, 0.00)	DC
	7TH HIGHEST VALUE IS	1.37749	AT (468419.60, 3780604.80, 1.50, 0.00, 0.00)	DC
	8TH HIGHEST VALUE IS	1.30396	AT (468314.90, 3780755.00, 1.50, 0.00, 0.00)	DC
	9TH HIGHEST VALUE IS	1.29622	AT (468472.50, 3780878.20, 1.50, 0.00, 0.00)	DC
	10TH HIGHEST VALUE IS	1.25085	AT (468480.20, 3780884.30, 1.50, 0.00, 0.00)	DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

```
↑ *** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                    ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
   14:05:24

   PAGE  19
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL

                                              *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***


                                   ** CONC OF PM10     IN MICROGRAMS/M**3                          **

                                                     DATE
          NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)
 OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS      22.37284  ON 10091905: AT (  468363.00,  3780677.70,     1.50,     0.00,
0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                    ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
   14:05:24

   PAGE  20
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL

                                              *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                   ** CONC OF PM10     IN MICROGRAMS/M**3                          **

                                                     DATE
          NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)
 OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS      10.68635  ON 11121924: AT (  468363.00,  3780677.70,     1.50,     0.00,
0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION  15181 ***   ***  PM10 Mitigated                                                    ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
   14:05:24

   PAGE  21
 **MODELOPTs:   RegDFAULT CONC      ELEV      DRYDPLT   RURAL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------
```

```
A Total of            0 Fatal Error Message(s)
A Total of            0 Warning Message(s)
A Total of         1086 Informational Message(s)

A Total of        17520 Hours Were Processed

A Total of            5 Calm Hours Identified

A Total of          533 Missing Hours Identified (  3.04 Percent)


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
              ***  NONE  ***


   ************************************
   *** AERMOD Finishes Successfully ***
   ************************************
```

ATTACHMENT D

PM_{10} Onsite Exhaust AERMOD Output

```
                    AERMOD PRIME - (DATED  15181)

                    AERMODPrMSPx VERSION
            (C) COPYRIGHT 1998-2015, Trinity Consultants

 Run Began on  5/05/2016 at 15:16:06

** BREEZE AERMOD
** Trinity Consultants
** VERSION  7.10

CO STARTING
CO TITLEONE  PM10 exhaust only Tier IV
CO MODELOPT  DFAULT  CONC
CO RUNORNOT  RUN
CO AVERTIME  1  24  ANNUAL
CO POLLUTID  PM10
CO FINISHED

SO STARTING
SO ELEVUNIT  METERS
SO LOCATION  FUDT901U  AREAPOLY  468475.7  3780849  0
** SRCDESCR  Area Source
SO SRCPARAM  FUDT901U  6.94E-09  3  4  1
SO AREAVERT  FUDT901U  468475.7 3780849  468560.1 3780738.3  468424.5 3780639.3  468342.5 3780744.9
SO SRCGROUP  ALL
SO FINISHED

RE STARTING
RE ELEVUNIT  METERS
** BOUNDARY  L8J2Y001
RE DISCCART  468480.2  3780884.3  1.5  0
RE DISCCART  468540.9  3780804.8  1.5  0
RE DISCCART  468595.5  3780733.2  1.5  0
RE DISCCART  468587.4  3780727.3  1.5  0
RE DISCCART  468506.6  3780668.3  1.5  0
RE DISCCART  468425.9  3780609.3  1.5  0
RE DISCCART  468419.6  3780604.8  1.5  0
RE DISCCART  468363.0  3780677.7  1.5  0
RE DISCCART  468307.5  3780749.3  1.5  0
RE DISCCART  468314.9  3780755.0  1.5  0
RE DISCCART  468393.7  3780816.6  1.5  0
RE DISCCART  468472.5  3780878.2  1.5  0
** BOUNDARY  L8J2Y00F
RE DISCCART  468493.9  3780990.1  1.5  0
RE DISCCART  468554.5  3780910.6  1.5  0
RE DISCCART  468615.1  3780831.1  1.5  0
RE DISCCART  468675.8  3780751.5  1.5  0
RE DISCCART  468701.5  3780717.7  1.5  0
RE DISCCART  468655.1  3780683.8  1.5  0
RE DISCCART  468574.3  3780624.9  1.5  0
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RE DISCCART  468288.3  3780651.7  1.5  0
RE DISCCART  468226.9  3780730.7  1.5  0
RE DISCCART  468202.4  3780762.3  1.5  0
RE DISCCART  468249.6  3780799.2  1.5  0
RE DISCCART  468328.4  3780860.8  1.5  0
RE DISCCART  468407.2  3780922.4  1.5  0
RE DISCCART  468486.0  3780984.0  1.5  0
** BOUNDARY  L8J2Y00O
RE DISCCART  468512.0  3781131.2  1.5  0
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RE DISCCART  468633.3  3780972.2  1.5  0
RE DISCCART  468693.9  3780892.7  1.5  0
```

```
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RE DISCCART  468062.3  3780779.7  1.5  0
RE DISCCART  468110.1  3780817.1  1.5  0
RE DISCCART  468188.9  3780878.7  1.5  0
RE DISCCART  468267.7  3780940.2  1.5  0
RE DISCCART  468346.5  3781001.8  1.5  0
RE DISCCART  468425.2  3781063.4  1.5  0
RE DISCCART  468504.0  3781125.0  1.5  0
** BOUNDARY  L8J2Y00X
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RE DISCCART  468155.3  3780170.8  1.5  0
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RE DISCCART  467849.2  3780993.9  1.5  0
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RE DISCCART  468164.3  3781240.3  1.5  0
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RE DISCCART  468243.1  3781301.8  1.5  0
RE DISCCART  468321.9  3781363.4  1.5  0
RE DISCCART  468400.7  3781425.0  1.5  0
RE DISCCART  468479.5  3781486.5  1.5  0
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RE DISCCART  468558.3  3781548.1  1.5  0
** BOUNDARY  L8J2Y023
RE DISCCART  468484.8  3780919.6  1.5  0
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RE DISCCART  468606.0  3780760.5  1.5  0
RE DISCCART  468630.8  3780728.0  1.5  0
```

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RE DISCCART  468583.0  3780693.1  1.5  0
RE DISCCART  468502.3  3780634.2  1.5  0
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RE DISCCART  468414.8  3780570.3  1.5  0
RE DISCCART  468358.6  3780642.7  1.5  0
RE DISCCART  468297.2  3780721.7  1.5  0
RE DISCCART  468272.4  3780753.6  1.5  0
RE DISCCART  468319.4  3780790.3  1.5  0
RE DISCCART  468398.2  3780851.9  1.5  0
RE DISCCART  468477.0  3780913.4  1.5  0
RE FINISHED

ME STARTING
ME SURFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.SFC"
** SURFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.SFC"
ME PROFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.PFL"
** PROFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.PFL"
ME SURFDATA  0 2007
ME UAIRDATA  3190 2007
ME PROFBASE  5  METERS
ME STARTEND  2010  1  1  1  2011  12  31  24
ME FINISHED

OU STARTING
OU RECTABLE  1  FIRST
OU RECTABLE  24  FIRST
OU FILEFORM  FIX
OU PLOTFILE  1  ALL  FIRST  ALL`1`FIRST.plt  10000
OU PLOTFILE  24  ALL  FIRST  ALL`24`FIRST.plt  10001
OU PLOTFILE  ANNUAL  ALL  ALL`ANNUAL.plt  10002
OU FINISHED

** ****************************************************************************
** It is recommended that the user not edit any data below this line
** ****************************************************************************


** AMPTYPE
** AMPDATUM  -1
** AMPZONE  -1
** AMPHEMISPHERE

** PROJECTION  UTM
** DATUM  WGE
** UNITS  METER
** ZONE  11
** HEMISPHERE  N
** ORIGINLON  0
** ORIGINLAT  0
** PARALLEL1  0
** PARALLEL2  0
** AZIMUTH  0
** SCALEFACT  0
** FALSEEAST  0
** FALSENORTH  0

** POSTFMT  UNFORM
** TEMPLATE USERDEFINED
** AERMODEXE  AERMOD_BREEZE_15181.EXE
** AERMAPEXE  AERMAP_EPA_11103.EXE


 ************************************
 *** SETUP Finishes Successfully ***
 ************************************
```

```
**MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

  --  DEPOSITION LOGIC  --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
**Model Uses NO WET DEPLETION.  WETDPLT  =  F

**Model Uses RURAL Dispersion Only.

**Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

**Other Options Specified:
        TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  PM10

**Model Calculates  2 Short Term Average(s) of:   1-HR  24-HR
    and Calculates ANNUAL Averages

**This Run Includes:      1 Source(s);       1 Source Group(s); and     176 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:      0 VOLUME source(s)
                and:      1 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 OPENPIT source(s)


**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date:  14134

**Output Options Selected:
         Model Outputs Tables of ANNUAL Averages by Receptor
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     5.00 ;  Decay Coef. =    0.000     ;  Rot. Angle
=     0.0
                 Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =
0.10000E+07
                 Output Units   = MICROGRAMS/M**3
```

```
**Approximate Storage Requirements of Model =      3.5 MB of RAM.

**Input Runstream File:          AERMOD.INP

**Output Print File:             AERMOD.OUT


 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                              ***
    05/05/16
*** AERMET - VERSION  14134 ***   ***                                                                         ***
  15:16:06

  PAGE   2
**MODELOPTs:   RegDFAULT CONC      ELEV      RURAL


                                              *** AREAPOLY SOURCE DATA ***

              NUMBER EMISSION RATE   LOCATION OF AREA  BASE     RELEASE  NUMBER      INIT.   URBAN  EMISSION RATE
  SOURCE       PART.  (GRAMS/SEC       X        Y      ELEV.    HEIGHT  OF VERTS.     SZ     SOURCE  SCALAR VARY
    ID         CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS)            (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

FUDT901U         0   0.69400E-08  468475.7 3780849.0     0.0     3.00       4        1.00     NO
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                              ***
    05/05/16
*** AERMET - VERSION  14134 ***   ***                                                                         ***
  15:16:06

  PAGE   3
**MODELOPTs:   RegDFAULT CONC      ELEV      RURAL


                                         *** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID                                          SOURCE IDs
-----------                                          ----------


 ALL        FUDT901U    ,
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                              ***
    05/05/16
*** AERMET - VERSION  14134 ***   ***                                                                         ***
  15:16:06

  PAGE   4
**MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                           *** DISCRETE CARTESIAN RECEPTORS ***
                                         (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                         (METERS)

    ( 468480.2, 3780884.3,       1.5,       0.0,       0.0);        ( 468540.9, 3780804.8,       1.5,       0.0,
    0.0);
    ( 468595.5, 3780733.2,       1.5,       0.0,       0.0);        ( 468587.4, 3780727.3,       1.5,       0.0,
    0.0);
    ( 468506.6, 3780668.3,       1.5,       0.0,       0.0);        ( 468425.9, 3780609.3,       1.5,       0.0,
    0.0);
    ( 468419.6, 3780604.8,       1.5,       0.0,       0.0);        ( 468363.0, 3780677.7,       1.5,       0.0,
    0.0);
    ( 468307.5, 3780749.3,       1.5,       0.0,       0.0);        ( 468314.9, 3780755.0,       1.5,       0.0,
    0.0);
    ( 468393.7, 3780816.6,       1.5,       0.0,       0.0);        ( 468472.5, 3780878.2,       1.5,       0.0,
    0.0);
    ( 468493.9, 3780990.1,       1.5,       0.0,       0.0);        ( 468554.5, 3780910.6,       1.5,       0.0,
    0.0);
```

(468615.1, 3780831.1, 1.5, 0.0, 0.0); (468675.8, 3780751.5, 1.5, 0.0, 0.0);
(468701.5, 3780717.7, 1.5, 0.0, 0.0); (468655.1, 3780683.8, 1.5, 0.0, 0.0);
(468574.3, 3780624.9, 1.5, 0.0, 0.0); (468493.6, 3780565.9, 1.5, 0.0, 0.0);
(468412.8, 3780506.9, 1.5, 0.0, 0.0); (468405.1, 3780501.3, 1.5, 0.0, 0.0);
(468349.6, 3780572.7, 1.5, 0.0, 0.0); (468288.3, 3780651.7, 1.5, 0.0, 0.0);
(468226.9, 3780730.7, 1.5, 0.0, 0.0); (468202.4, 3780762.3, 1.5, 0.0, 0.0);
(468249.6, 3780799.2, 1.5, 0.0, 0.0); (468328.4, 3780860.8, 1.5, 0.0, 0.0);
(468407.2, 3780922.4, 1.5, 0.0, 0.0); (468486.0, 3780984.0, 1.5, 0.0, 0.0);
(468512.0, 3781131.2, 1.5, 0.0, 0.0); (468572.7, 3781051.7, 1.5, 0.0, 0.0);
(468633.3, 3780972.2, 1.5, 0.0, 0.0); (468693.9, 3780892.7, 1.5, 0.0, 0.0);
(468754.5, 3780813.1, 1.5, 0.0, 0.0); (468815.2, 3780733.6, 1.5, 0.0, 0.0);
(468843.0, 3780697.2, 1.5, 0.0, 0.0); (468799.2, 3780665.2, 1.5, 0.0, 0.0);
(468718.4, 3780606.3, 1.5, 0.0, 0.0); (468637.7, 3780547.3, 1.5, 0.0, 0.0);
(468556.9, 3780488.3, 1.5, 0.0, 0.0); (468476.1, 3780429.4, 1.5, 0.0, 0.0);
(468395.4, 3780370.4, 1.5, 0.0, 0.0); (468385.6, 3780363.3, 1.5, 0.0, 0.0);
(468331.7, 3780432.7, 1.5, 0.0, 0.0); (468270.4, 3780511.7, 1.5, 0.0, 0.0);
(468209.0, 3780590.7, 1.5, 0.0, 0.0); (468147.7, 3780669.7, 1.5, 0.0, 0.0);
(468086.4, 3780748.7, 1.5, 0.0, 0.0); (468062.3, 3780779.7, 1.5, 0.0, 0.0);
(468110.1, 3780817.1, 1.5, 0.0, 0.0); (468188.9, 3780878.7, 1.5, 0.0, 0.0);
(468267.7, 3780940.2, 1.5, 0.0, 0.0); (468346.5, 3781001.8, 1.5, 0.0, 0.0);
(468425.2, 3781063.4, 1.5, 0.0, 0.0); (468504.0, 3781125.0, 1.5, 0.0, 0.0);
(468566.5, 3781554.6, 1.5, 0.0, 0.0); (468657.5, 3781435.3, 1.5, 0.0, 0.0);
(468687.8, 3781395.6, 1.5, 0.0, 0.0); (468687.8, 3781395.6, 1.5, 0.0, 0.0);
(468718.1, 3781355.7, 1.5, 0.0, 0.0); (468778.7, 3781276.2, 1.5, 0.0, 0.0);
(468809.0, 3781236.5, 1.5, 0.0, 0.0); (468839.3, 3781196.7, 1.5, 0.0, 0.0);
(468869.6, 3781157.0, 1.5, 0.0, 0.0); (468869.7, 3781156.9, 1.5, 0.0, 0.0);
(468900.0, 3781117.2, 1.5, 0.0, 0.0); (468930.3, 3781077.4, 1.5, 0.0, 0.0);
(468960.6, 3781037.7, 1.5, 0.0, 0.0); (469021.2, 3780958.1, 1.5, 0.0, 0.0);
(469051.6, 3780918.4, 1.5, 0.0, 0.0); (469112.1, 3780838.9, 1.5, 0.0, 0.0);
(469112.2, 3780838.8, 1.5, 0.0, 0.0); (469142.5, 3780799.1, 1.5, 0.0, 0.0);
(469172.8, 3780759.3, 1.5, 0.0, 0.0); (469203.1, 3780719.6, 1.5, 0.0, 0.0);
(469263.8, 3780640.0, 1.5, 0.0, 0.0); (469267.2, 3780635.5, 1.5, 0.0, 0.0);
(469231.5, 3780609.4, 1.5, 0.0, 0.0); (469069.9, 3780491.4, 1.5, 0.0, 0.0);
(469029.6, 3780462.0, 1.5, 0.0, 0.0); (468908.4, 3780373.5, 1.5, 0.0,

```
    0.0);
    ( 468868.0, 3780344.0,       1.5,       0.0,       0.0);         ( 468787.3, 3780285.1,       1.5,       0.0,
    0.0);
    ( 468746.9, 3780255.6,       1.5,       0.0,       0.0);         ( 468625.7, 3780167.1,       1.5,       0.0,
    0.0);
    ( 468585.3, 3780137.7,       1.5,       0.0,       0.0);         ( 468545.0, 3780108.2,       1.5,       0.0,
    0.0);
    ( 468423.8, 3780019.7,       1.5,       0.0,       0.0);         ( 468383.4, 3779990.2,       1.5,       0.0,
    0.0);
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                                ***
    05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                          ***
  15:16:06

  PAGE   5
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                          *** DISCRETE CARTESIAN RECEPTORS ***
                                       (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                   (METERS)

    ( 468327.3, 3779949.3,       1.5,       0.0,       0.0);         ( 468308.6, 3779973.3,       1.5,       0.0,
    0.0);
    ( 468277.9, 3780012.8,       1.5,       0.0,       0.0);         ( 468277.9, 3780012.9,       1.5,       0.0,
    0.0);
    ( 468277.9, 3780012.9,       1.5,       0.0,       0.0);         ( 468247.3, 3780052.3,       1.5,       0.0,
    0.0);
    ( 468216.6, 3780091.9,       1.5,       0.0,       0.0);         ( 468185.9, 3780131.3,       1.5,       0.0,
    0.0);
    ( 468155.3, 3780170.8,       1.5,       0.0,       0.0);         ( 468155.3, 3780170.8,       1.5,       0.0,
    0.0);
    ( 468155.2, 3780170.9,       1.5,       0.0,       0.0);         ( 468063.3, 3780289.3,       1.5,       0.0,
    0.0);
    ( 468032.6, 3780328.8,       1.5,       0.0,       0.0);         ( 468001.9, 3780368.2,       1.5,       0.0,
    0.0);
    ( 467971.3, 3780407.7,       1.5,       0.0,       0.0);         ( 467971.2, 3780407.8,       1.5,       0.0,
    0.0);
    ( 467909.9, 3780486.7,       1.5,       0.0,       0.0);         ( 467909.9, 3780486.7,       1.5,       0.0,
    0.0);
    ( 467909.9, 3780486.8,       1.5,       0.0,       0.0);         ( 467879.3, 3780526.2,       1.5,       0.0,
    0.0);
    ( 467848.6, 3780565.8,       1.5,       0.0,       0.0);         ( 467817.9, 3780605.2,       1.5,       0.0,
    0.0);
    ( 467787.3, 3780644.7,       1.5,       0.0,       0.0);         ( 467787.3, 3780644.7,       1.5,       0.0,
    0.0);
    ( 467787.2, 3780644.8,       1.5,       0.0,       0.0);         ( 467695.3, 3780763.2,       1.5,       0.0,
    0.0);
    ( 467664.6, 3780802.7,       1.5,       0.0,       0.0);         ( 467641.9, 3780831.9,       1.5,       0.0,
    0.0);
    ( 467652.1, 3780839.9,       1.5,       0.0,       0.0);         ( 467691.6, 3780870.7,       1.5,       0.0,
    0.0);
    ( 467770.3, 3780932.3,       1.5,       0.0,       0.0);         ( 467770.3, 3780932.3,       1.5,       0.0,
    0.0);
    ( 467809.7, 3780963.1,       1.5,       0.0,       0.0);         ( 467849.1, 3780993.8,       1.5,       0.0,
    0.0);
    ( 467849.2, 3780993.9,       1.5,       0.0,       0.0);         ( 467888.5, 3781024.6,       1.5,       0.0,
    0.0);
    ( 467927.8, 3781055.4,       1.5,       0.0,       0.0);         ( 467927.9, 3781055.5,       1.5,       0.0,
    0.0);
    ( 467927.9, 3781055.5,       1.5,       0.0,       0.0);         ( 468085.4, 3781178.7,       1.5,       0.0,
    0.0);
    ( 468085.5, 3781178.7,       1.5,       0.0,       0.0);         ( 468164.2, 3781240.2,       1.5,       0.0,
    0.0);
    ( 468164.3, 3781240.3,       1.5,       0.0,       0.0);         ( 468203.6, 3781270.9,       1.5,       0.0,
    0.0);
    ( 468243.1, 3781301.8,       1.5,       0.0,       0.0);         ( 468243.1, 3781301.8,       1.5,       0.0,
    0.0);
```

```
     ( 468400.6, 3781424.9,       1.5,       0.0,       0.0);         ( 468400.7, 3781425.0,       1.5,       0.0,
     0.0);
     ( 468479.5, 3781486.5,       1.5,       0.0,       0.0);         ( 468518.8, 3781517.3,       1.5,       0.0,
     0.0);
     ( 468558.2, 3781548.0,       1.5,       0.0,       0.0);         ( 468558.2, 3781548.0,       1.5,       0.0,
     0.0);
     ( 468558.3, 3781548.1,       1.5,       0.0,       0.0);         ( 467770.3, 3780932.3,       1.5,       0.0,
     0.0);
     ( 467809.7, 3780963.1,       1.5,       0.0,       0.0);         ( 467849.1, 3780993.8,       1.5,       0.0,
     0.0);
     ( 467849.2, 3780993.9,       1.5,       0.0,       0.0);         ( 467888.5, 3781024.6,       1.5,       0.0,
     0.0);
     ( 467927.8, 3781055.4,       1.5,       0.0,       0.0);         ( 467927.9, 3781055.5,       1.5,       0.0,
     0.0);
     ( 468006.7, 3781117.1,       1.5,       0.0,       0.0);         ( 468085.5, 3781178.7,       1.5,       0.0,
     0.0);
     ( 468164.2, 3781240.2,       1.5,       0.0,       0.0);         ( 468164.3, 3781240.3,       1.5,       0.0,
     0.0);
     ( 468203.6, 3781270.9,       1.5,       0.0,       0.0);         ( 468243.1, 3781301.8,       1.5,       0.0,
     0.0);
     ( 468321.9, 3781363.4,       1.5,       0.0,       0.0);         ( 468400.7, 3781425.0,       1.5,       0.0,
     0.0);
     ( 468479.5, 3781486.5,       1.5,       0.0,       0.0);         ( 468518.8, 3781517.3,       1.5,       0.0,
     0.0);
     ( 468558.2, 3781548.0,       1.5,       0.0,       0.0);         ( 468558.3, 3781548.1,       1.5,       0.0,
     0.0);
     ( 468484.8, 3780919.6,       1.5,       0.0,       0.0);         ( 468545.4, 3780840.0,       1.5,       0.0,
     0.0);
     ( 468606.0, 3780760.5,       1.5,       0.0,       0.0);         ( 468630.8, 3780728.0,       1.5,       0.0,
     0.0);
     ( 468583.0, 3780693.1,       1.5,       0.0,       0.0);         ( 468502.3, 3780634.2,       1.5,       0.0,
     0.0);
     ( 468421.5, 3780575.2,       1.5,       0.0,       0.0);         ( 468414.8, 3780570.3,       1.5,       0.0,
     0.0);
     ( 468358.6, 3780642.7,       1.5,       0.0,       0.0);         ( 468297.2, 3780721.7,       1.5,       0.0,
     0.0);
     ( 468272.4, 3780753.6,       1.5,       0.0,       0.0);         ( 468319.4, 3780790.3,       1.5,       0.0,
     0.0);
     ( 468398.2, 3780851.9,       1.5,       0.0,       0.0);         ( 468477.0, 3780913.4,       1.5,       0.0,
     0.0);
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                                  ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                            ***
   15:16:06

   PAGE   6
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                     (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
```

Attach D - 150K PM10exhaust Tier IV concentric
METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2010 1 1 1
AND END DATE: 2011 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** AERMOD - VERSION 15181 *** *** PM10 exhaust only Tier IV ***
05/05/16
*** AERMET - VERSION 14134 *** *** ***
15:16:06

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**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.SFC Met Version: 14134
Profile file: C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.PFL
Surface format: FREE

Profile format: FREE

Surface station no.: 0 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN
Year: 2007 Year: 2007

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
07	01	01	1	01	-0.5	0.030	-9.000	-9.000	-999.	12.	4.4	0.32	1.00	1.00	0.50	27.	9.1	279.9	5.5
07	01	01	1	02	-0.5	0.030	-9.000	-9.000	-999.	12.	4.3	0.32	1.00	1.00	0.50	7.	9.1	279.2	5.5
07	01	01	1	03	-0.5	0.030	-9.000	-9.000	-999.	12.	4.3	0.32	1.00	1.00	0.50	97.	9.1	278.8	5.5
07	01	01	1	04	-0.7	0.030	-9.000	-9.000	-999.	12.	3.1	0.32	1.00	1.00	0.50	148.	9.1	278.1	5.5
07	01	01	1	05	-2.4	0.054	-9.000	-9.000	-999.	30.	5.5	0.32	1.00	1.00	0.90	87.	9.1	278.1	5.5
07	01	01	1	06	-1.7	0.054	-9.000	-9.000	-999.	30.	7.8	0.32	1.00	1.00	0.90	208.	9.1	277.0	5.5
07	01	01	1	07	-1.7	0.054	-9.000	-9.000	-999.	30.	7.8	0.32	1.00	1.00	0.90	156.	9.1	277.5	5.5
07	01	01	1	08	-1.7	0.054	-9.000	-9.000	-999.	30.	7.8	0.32	1.00	0.52	0.90	60.	9.1	277.5	5.5
07	01	01	1	09	34.6	0.390	0.621	0.005	241.	585.	-149.6	0.32	1.00	0.31	3.10	264.	9.1	282.5	5.5
07	01	01	1	10	78.0	0.267	1.066	0.005	541.	341.	-21.3	0.32	1.00	0.24	1.80	242.	9.1	289.2	5.5
07	01	01	1	11	112.9	0.612	1.395	0.019	839.	1149.	-176.9	0.32	1.00	0.21	4.90	82.	9.1	290.4	5.5
07	01	01	1	12	130.3	0.615	1.611	0.020	1120.	1158.	-155.8	0.32	1.00	0.20	4.90	74.	9.1	290.9	5.5
07	01	01	1	13	128.2	0.671	1.662	0.015	1250.	1315.	-204.9	0.32	1.00	0.20	5.40	59.	9.1	290.9	5.5
07	01	01	1	14	107.5	0.712	1.575	0.007	1267.	1439.	-292.1	0.32	1.00	0.22	5.80	58.	9.1	291.4	5.5
07	01	01	1	15	68.1	0.602	1.356	0.021	1277.	1137.	-279.3	0.32	1.00	0.25	4.90	40.	9.1	291.4	

```
5.5
07 01 01   1 16   18.1  0.438  0.872  0.021 1278.  724.   -405.7  0.32   1.00   0.34    3.60  312.    9.1  292.0
5.5
07 01 01   1 17  -25.8  0.263 -9.000 -9.000 -999.  353.     61.6  0.32   1.00   0.63    2.70  342.    9.1  290.9
5.5
07 01 01   1 18   -4.9  0.077 -9.000 -9.000 -999.  114.      8.1  0.32   1.00   1.00    1.30  256.    9.1  289.2
5.5
07 01 01   1 19   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1  0.32   1.00   1.00    1.30  191.    9.1  289.9
5.5
07 01 01   1 20   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1  0.32   1.00   1.00    1.30  197.    9.1  289.9
5.5
07 01 01   1 21   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1  0.32   1.00   1.00    1.30  190.    9.1  289.9
5.5
07 01 01   1 22   -2.4  0.054 -9.000 -9.000 -999.   30.      5.6  0.32   1.00   1.00    0.90  188.    9.1  289.2
5.5
07 01 01   1 23   -9.5  0.107 -9.000 -9.000 -999.   84.     11.3  0.32   1.00   1.00    1.80  162.    9.1  289.9
5.5
07 01 01   1 24   -9.5  0.107 -9.000 -9.000 -999.   84.     11.3  0.32   1.00   1.00    1.80   42.    9.1  289.2
5.5


First hour of profile data
YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
07 01 01 01    5.5 0 -999.  -99.00   279.9   99.0  -99.00  -99.00
07 01 01 01    9.1 1   27.    0.50  -999.0   99.0  -99.00  -99.00

F indicates top of profile (=1) or below (=0)
↑ *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                     ***
    05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                  ***
  15:16:06

  PAGE   8
**MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   2 YEARS FOR SOURCE GROUP: ALL
***
                                  INCLUDING SOURCE(S):     FUDT901U    ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                       ** CONC OF PM10     IN MICROGRAMS/M**3                         **

      X-COORD (M)   Y-COORD (M)        CONC                         X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - -
        468480.20    3780884.30       0.03771                        468540.90    3780804.80       0.06249

        468595.50    3780733.20       0.01491                        468587.40    3780727.30       0.01556

        468506.60    3780668.30       0.03006                        468425.90    3780609.30       0.04209

        468419.60    3780604.80       0.04215                        468363.00    3780677.70       0.07451

        468307.50    3780749.30       0.03733                        468314.90    3780755.00       0.03877

        468393.70    3780816.60       0.04425                        468472.50    3780878.20       0.03828

        468493.90    3780990.10       0.01435                        468554.50    3780910.60       0.03482

        468615.10    3780831.10       0.02717                        468675.80    3780751.50       0.00726

        468701.50    3780717.70       0.00466                        468655.10    3780683.80       0.00545

        468574.30    3780624.90       0.00814                        468493.60    3780565.90       0.01316

        468412.80    3780506.90       0.01814                        468405.10    3780501.30       0.01835
```

468349.60	3780572.70	0.03721	468288.30	3780651.70	0.03718
468226.90	3780730.70	0.02035	468202.40	3780762.30	0.01609
468249.60	3780799.20	0.01858	468328.40	3780860.80	0.01755
468407.20	3780922.40	0.01404	468486.00	3780984.00	0.01430
468512.00	3781131.20	0.00668	468572.70	3781051.70	0.01334
468633.30	3780972.20	0.02068	468693.90	3780892.70	0.01482
468754.50	3780813.10	0.00604	468815.20	3780733.60	0.00264
468843.00	3780697.20	0.00203	468799.20	3780665.20	0.00224
468718.40	3780606.30	0.00294	468637.70	3780547.30	0.00398
468556.90	3780488.30	0.00504	468476.10	3780429.40	0.00681
468395.40	3780370.40	0.00877	468385.60	3780363.30	0.00892
468331.70	3780432.70	0.01601	468270.40	3780511.70	0.02235
468209.00	3780590.70	0.02036	468147.70	3780669.70	0.01376
468086.40	3780748.70	0.00921	468062.30	3780779.70	0.00802
468110.10	3780817.10	0.00908	468188.90	3780878.70	0.00972
468267.70	3780940.20	0.00835	468346.50	3781001.80	0.00665
468425.20	3781063.40	0.00614	468504.00	3781125.00	0.00664
468566.50	3781554.60	0.00197	468657.50	3781435.30	0.00321
468687.80	3781395.60	0.00384	468687.80	3781395.60	0.00384
468718.10	3781355.70	0.00462	468778.70	3781276.20	0.00634
468809.00	3781236.50	0.00694	468839.30	3781196.70	0.00707
468869.60	3781157.00	0.00667	468869.70	3781156.90	0.00667
468900.00	3781117.20	0.00592	468930.30	3781077.40	0.00506
468960.60	3781037.70	0.00421	469021.20	3780958.10	0.00266
469051.60	3780918.40	0.00206	469112.10	3780838.90	0.00127
469112.20	3780838.80	0.00127	469142.50	3780799.10	0.00103
469172.80	3780759.30	0.00085	469203.10	3780719.60	0.00073
469263.80	3780640.00	0.00058	469267.20	3780635.50	0.00057
469231.50	3780609.40	0.00060	469069.90	3780491.40	0.00076

Attach D - 150K PM10exhaust Tier IV concentric

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 2 YEARS FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
469029.60	3780462.00	0.00083	468908.40	3780373.50	0.00107
468868.00	3780344.00	0.00115	468787.30	3780285.10	0.00132
468746.90	3780255.60	0.00138	468625.70	3780167.10	0.00152
468585.30	3780137.70	0.00161	468545.00	3780108.20	0.00175
468423.80	3780019.70	0.00226	468383.40	3779990.20	0.00242
468327.30	3779949.30	0.00262	468308.60	3779973.30	0.00295
468277.90	3780012.80	0.00361	468277.90	3780012.90	0.00361
468277.90	3780012.90	0.00361	468247.30	3780052.30	0.00436
468216.60	3780091.90	0.00518	468185.90	3780131.30	0.00598
468155.30	3780170.80	0.00667	468155.30	3780170.80	0.00667
468155.20	3780170.90	0.00667	468063.30	3780289.30	0.00741
468032.60	3780328.80	0.00734	468001.90	3780368.20	0.00722
467971.30	3780407.70	0.00696	467971.20	3780407.80	0.00696
467909.90	3780486.70	0.00587	467909.90	3780486.70	0.00587
467909.90	3780486.80	0.00587	467879.30	3780526.20	0.00525
467848.60	3780565.80	0.00470	467817.90	3780605.20	0.00421
467787.30	3780644.70	0.00377	467787.30	3780644.70	0.00377
467787.20	3780644.80	0.00377	467695.30	3780763.20	0.00287
467664.60	3780802.70	0.00266	467641.90	3780831.90	0.00251
467652.10	3780839.90	0.00255	467691.60	3780870.70	0.00270
467770.30	3780932.30	0.00296	467770.30	3780932.30	0.00296
467809.70	3780963.10	0.00305	467849.10	3780993.80	0.00311
467849.20	3780993.90	0.00311	467888.50	3781024.60	0.00311
467927.80	3781055.40	0.00302	467927.90	3781055.50	0.00302
467927.90	3781055.50	0.00302	468085.40	3781178.70	0.00243
468085.50	3781178.70	0.00243	468164.20	3781240.20	0.00222
468164.30	3781240.30	0.00222	468203.60	3781270.90	0.00211
468243.10	3781301.80	0.00196	468243.10	3781301.80	0.00196

468400.60	3781424.90	0.00170	468400.70	3781425.00	0.00170
468479.50	3781486.50	0.00186	468518.80	3781517.30	0.00192
468558.20	3781548.00	0.00196	468558.20	3781548.00	0.00196
468558.30	3781548.10	0.00196	467770.30	3780932.30	0.00296
467809.70	3780963.10	0.00305	467849.10	3780993.80	0.00311
467849.20	3780993.90	0.00311	467888.50	3781024.60	0.00311
467927.80	3781055.40	0.00302	467927.90	3781055.50	0.00302
468006.70	3781117.10	0.00271	468085.50	3781178.70	0.00243
468164.20	3781240.20	0.00222	468164.30	3781240.30	0.00222
468203.60	3781270.90	0.00211	468243.10	3781301.80	0.00196
468321.90	3781363.40	0.00170	468400.70	3781425.00	0.00170
468479.50	3781486.50	0.00186	468518.80	3781517.30	0.00192

*** AERMOD - VERSION 15181 *** *** PM10 exhaust only Tier IV ***
05/05/16
*** AERMET - VERSION 14134 *** *** ***
15:16:06

PAGE 10
**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 2 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
468558.20	3781548.00	0.00196	468558.30	3781548.10	0.00196
468484.80	3780919.60	0.02558	468545.40	3780840.00	0.05363
468606.00	3780760.50	0.01821	468630.80	3780728.00	0.00911
468583.00	3780693.10	0.01140	468502.30	3780634.20	0.02120
468421.50	3780575.20	0.03035	468414.80	3780570.30	0.03051
468358.60	3780642.70	0.06048	468297.20	3780721.70	0.03814
468272.40	3780753.60	0.02671	468319.40	3780790.30	0.03053
468398.20	3780851.90	0.02814	468477.00	3780913.40	0.02572

*** AERMOD - VERSION 15181 *** *** PM10 exhaust only Tier IV ***
05/05/16
*** AERMET - VERSION 14134 *** *** ***
15:16:06

PAGE 11
**MODELOPTs: RegDFAULT CONC ELEV RURAL

Attach D - 150K PM10exhaust Tier IV concentric

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
468480.20	3780884.30	0.66515	(10081302)	468540.90	3780804.80	0.62562	(11082102)
468595.50	3780733.20	0.66723	(11110520)	468587.40	3780727.30	0.66268	(10040201)
468506.60	3780668.30	0.52406	(11100802)	468425.90	3780609.30	0.66235	(10083104)
468419.60	3780604.80	0.66594	(11051903)	468363.00	3780677.70	0.62551	(11101123)
468307.50	3780749.30	0.66953	(10090303)	468314.90	3780755.00	0.66530	(10050801)
468393.70	3780816.60	0.52512	(11022004)	468472.50	3780878.20	0.66023	(11080702)
468493.90	3780990.10	0.51093	(11080702)	468554.50	3780910.60	0.59126	(11081504)
468615.10	3780831.10	0.58994	(10091201)	468675.80	3780751.50	0.55772	(11011220)
468701.50	3780717.70	0.51089	(10040201)	468655.10	3780683.80	0.53638	(11092805)
468574.30	3780624.90	0.50327	(10052902)	468493.60	3780565.90	0.52164	(11080403)
468412.80	3780506.90	0.52283	(11103022)	468405.10	3780501.30	0.51619	(10050303)
468349.60	3780572.70	0.59108	(11101802)	468288.30	3780651.70	0.59082	(11050503)
468226.90	3780730.70	0.56099	(11101801)	468202.40	3780762.30	0.51582	(10050801)
468249.60	3780799.20	0.53991	(11051301)	468328.40	3780860.80	0.50591	(11022705)
468407.20	3780922.40	0.52085	(10020501)	468486.00	3780984.00	0.51837	(11101021)
468512.00	3781131.20	0.35979	(11080702)	468572.70	3781051.70	0.42397	(10071303)
468633.30	3780972.20	0.46637	(11050323)	468693.90	3780892.70	0.47283	(11080705)
468754.50	3780813.10	0.44774	(11030324)	468815.20	3780733.60	0.38926	(11110520)
468843.00	3780697.20	0.35953	(10040201)	468799.20	3780665.20	0.38500	(10050802)
468718.40	3780606.30	0.41389	(11081705)	468637.70	3780547.30	0.41925	(10122702)
468556.90	3780488.30	0.42055	(10092304)	468476.10	3780429.40	0.41189	(11050504)
468395.40	3780370.40	0.37160	(10091204)	468385.60	3780363.30	0.36527	(10050303)
468331.70	3780432.70	0.42392	(11120704)	468270.40	3780511.70	0.46622	(10091602)
468209.00	3780590.70	0.47328	(10091404)	468147.70	3780669.70	0.44846	(10091724)
468086.40	3780748.70	0.38915	(11050502)	468062.30	3780779.70	0.36308	(10081404)
468110.10	3780817.10	0.39255	(10061504)	468188.90	3780878.70	0.41977	(10091524)
468267.70	3780940.20	0.41946	(11042903)	468346.50	3781001.80	0.41968	(11101824)
468425.20	3781063.40	0.40743	(11052503)	468504.00	3781125.00	0.36492	

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(11101021)
        468566.50   3781554.60        0.16956  (11101021)                468657.50   3781435.30        0.19656
(11071703)
        468687.80   3781395.60        0.20635  (10062303)                468687.80   3781395.60        0.20635
(10062303)
        468718.10   3781355.70        0.21531  (11110424)                468778.70   3781276.20        0.23246
(11050523)
        468809.00   3781236.50        0.23987  (11062804)                468839.30   3781196.70        0.24520
(11111221)
        468869.60   3781157.00        0.24865  (11081402)                468869.70   3781156.90        0.24869
(11081402)
        468900.00   3781117.20        0.25149  (11071702)                468930.30   3781077.40        0.25161
(11081505)
        468960.60   3781037.70        0.24970  (11051223)                469021.20   3780958.10        0.24005
(10051204)
        469051.60   3780918.40        0.23001  (11083001)                469112.10   3780838.90        0.21616
(11090406)
        469112.20   3780838.80        0.21614  (11090406)                469142.50   3780799.10        0.20623
(11011220)
        469172.80   3780759.30        0.19730  (11090402)                469203.10   3780719.60        0.18796
(11110520)
        469263.80   3780640.00        0.16980  (10040201)                469267.20   3780635.50        0.16839
(10040201)
        469231.50   3780609.40        0.17509  (10112302)                469069.90   3780491.40        0.20458
(11080103)
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
   15:16:06

   PAGE  12
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL
 ***
                                  INCLUDING SOURCE(S):     FUDT901U    ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                       ** CONC OF PM10     IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
(YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - -
        469029.60   3780462.00        0.21663  (11081705)                468908.40   3780373.50        0.23343
(11030401)
        468868.00   3780344.00        0.23667  (10052902)                468787.30   3780285.10        0.23929
(11030921)
        468746.90   3780255.60        0.23869  (11032901)                468625.70   3780167.10        0.22919
(11111404)
        468585.30   3780137.70        0.22334  (11080403)                468545.00   3780108.20        0.21658
(11031803)
        468423.80   3780019.70        0.19337  (11050402)                468383.40   3779990.20        0.18496
(10040224)
        468327.30   3779949.30        0.17333  (11103022)                468308.60   3779973.30        0.17847
(10050303)
        468277.90   3780012.80        0.18782  (11051903)                468277.90   3780012.90        0.18784
(11051903)
        468277.90   3780012.90        0.18784  (11051903)                468247.30   3780052.30        0.19708
(11070105)
        468216.60   3780091.90        0.20872  (11120704)                468185.90   3780131.30        0.21581
(11090405)
        468155.30   3780170.80        0.22482  (10061502)                468155.30   3780170.80        0.22482
(10061502)
        468155.20   3780170.90        0.22483  (10061502)                468063.30   3780289.30        0.24523
(10092503)
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        468032.60   3780328.80        0.24941  (10091104)                468001.90   3780368.20        0.25139
(10050423)
        467971.30   3780407.70        0.25138  (11071804)                467971.20   3780407.80        0.25137
(11071804)
        467909.90   3780486.70        0.24496  (11062702)                467909.90   3780486.70        0.24496
(11062702)
        467909.90   3780486.80        0.24499  (11062702)                467879.30   3780526.20        0.23942
(11100922)
        467848.60   3780565.80        0.23207  (10040824)                467817.90   3780605.20        0.22399
(11070103)
        467787.30   3780644.70        0.21489  (10032422)                467787.30   3780644.70        0.21489
(10032422)
        467787.20   3780644.80        0.21487  (10032422)                467695.30   3780763.20        0.18664
(10090303)
        467664.60   3780802.70        0.17754  (10090101)                467641.90   3780831.90        0.17109
(10081404)
        467652.10   3780839.90        0.17340  (10080203)                467691.60   3780870.70        0.18145
(10041703)
        467770.30   3780932.30        0.19824  (11051301)                467770.30   3780932.30        0.19824
(11051301)
        467809.70   3780963.10        0.20663  (11051302)                467849.10   3780993.80        0.21414
(10081204)
        467849.20   3780993.90        0.21416  (10081204)                467888.50   3781024.60        0.22107
(10051305)
        467927.80   3781055.40        0.22722  (10091904)                467927.90   3781055.50        0.22723
(10091904)
        467927.90   3781055.50        0.22723  (10091904)                468085.40   3781178.70        0.23928
(11093004)
        468085.50   3781178.70        0.23931  (11093004)                468164.20   3781240.20        0.23758
(10090505)
        468164.30   3781240.30        0.23756  (10090505)                468203.60   3781270.90        0.23477
(11080704)
        468243.10   3781301.80        0.23046  (10111504)                468243.10   3781301.80        0.23046
(10111504)
        468400.60   3781424.90        0.20425  (11091801)                468400.70   3781425.00        0.20423
(11091801)
        468479.50   3781486.50        0.18791  (10050805)                468518.80   3781517.30        0.17953
(11090905)
        468558.20   3781548.00        0.17090  (11101021)                468558.20   3781548.00        0.17090
(11101021)
        468558.30   3781548.10        0.17088  (11101021)                467770.30   3780932.30        0.19824
(11051301)
        467809.70   3780963.10        0.20663  (11051302)                467849.10   3780993.80        0.21414
(10081204)
        467849.20   3780993.90        0.21416  (10081204)                467888.50   3781024.60        0.22107
(10051305)
        467927.80   3781055.40        0.22722  (10091904)                467927.90   3781055.50        0.22723
(10091904)
        468006.70   3781117.10        0.23691  (11022705)                468085.50   3781178.70        0.23931
(11093004)
        468164.20   3781240.20        0.23758  (10090505)                468164.30   3781240.30        0.23756
(10090505)
        468203.60   3781270.90        0.23477  (11080704)                468243.10   3781301.80        0.23046
(10111504)
        468321.90   3781363.40        0.21796  (11062603)                468400.70   3781425.00        0.20423
(11091801)
        468479.50   3781486.50        0.18791  (10050805)                468518.80   3781517.30        0.17953
(11090905)
*** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
    05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
   15:16:06

   PAGE  13
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL
```

Attach D - 150K PM10exhaust Tier IV concentric
***
INCLUDING SOURCE(S):   FUDT901U   ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10   IN MICROGRAMS/M**3   **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
468558.20	3781548.00	0.17090	(11101021)	468558.30	3781548.10	0.17088	(11101021)
468484.80	3780919.60	0.61662	(10013020)	468545.40	3780840.00	0.63008	(11081402)
468606.00	3780760.50	0.65988	(11090406)	468630.80	3780728.00	0.61497	(11090722)
468583.00	3780693.10	0.58574	(11080103)	468502.30	3780634.20	0.53974	(11111404)
468421.50	3780575.20	0.62242	(10050303)	468414.80	3780570.30	0.61942	(11072003)
468358.60	3780642.70	0.63266	(11091904)	468297.20	3780721.70	0.65980	(10020121)
468272.40	3780753.60	0.62114	(10090101)	468319.40	3780790.30	0.59017	(10083101)
468398.20	3780851.90	0.53549	(10112223)	468477.00	3780913.40	0.62037	(11080702)

*** AERMOD - VERSION 15181 ***   *** PM10 exhaust only Tier IV   ***
05/05/16
*** AERMET - VERSION 14134 ***   ***   ***
15:16:06

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**MODELOPTs: RegDFAULT CONC   ELEV   RURAL

*** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: ALL
***
INCLUDING SOURCE(S):   FUDT901U   ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10   IN MICROGRAMS/M**3   **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
468480.20	3780884.30	0.17928	(11032824)	468540.90	3780804.80	0.24570m	(11081524)
468595.50	3780733.20	0.09134	(11061224)	468587.40	3780727.30	0.09360	(10121524)
468506.60	3780668.30	0.11797m	(10123124)	468425.90	3780609.30	0.20483	(11122624)
468419.60	3780604.80	0.21223	(11122624)	468363.00	3780677.70	0.29192	(11121924)
468307.50	3780749.30	0.20431	(11013024)	468314.90	3780755.00	0.21265	(11013024)
468393.70	3780816.60	0.17697	(11111924)	468472.50	3780878.20	0.17784	(11032824)
468493.90	3780990.10	0.09391	(11032824)	468554.50	3780910.60	0.17355m	(11081524)
468615.10	3780831.10	0.15312m	(11081424)	468675.80	3780751.50	0.06610	(11061224)
468701.50	3780717.70	0.04615	(11061224)	468655.10	3780683.80	0.05528	(11111224)
468574.30	3780624.90	0.05880	(11011024)	468493.60	3780565.90	0.08533m	(10123124)

```
        468412.80   3780506.90        0.10357m (10123124)                468405.10   3780501.30        0.10221
(11111724)
        468349.60   3780572.70        0.20382  (11122624)                468288.30   3780651.70        0.19110
(11121924)
        468226.90   3780730.70        0.11133  (11013024)                468202.40   3780762.30        0.08581
(11121324)
        468249.60   3780799.20        0.12688  (11111924)                468328.40   3780860.80        0.11069
(11111924)
        468407.20   3780922.40        0.08111m (11041424)                468486.00   3780984.00        0.09381
(11032824)
        468512.00   3781131.20        0.04825  (11032824)                468572.70   3781051.70        0.08165m
(11081624)
        468633.30   3780972.20        0.13084m (11081524)                468693.90   3780892.70        0.09548m
(11081424)
        468754.50   3780813.10        0.04799m (11081624)                468815.20   3780733.60        0.03463
(11061224)
        468843.00   3780697.20        0.02439  (11111224)                468799.20   3780665.20        0.03646
(11111224)
        468718.40   3780606.30        0.03131  (10121524)                468637.70   3780547.30        0.03723
(11011024)
        468556.90   3780488.30        0.03757  (10022024)                468476.10   3780429.40        0.05920m
(10123124)
        468395.40   3780370.40        0.05970m (10123124)                468385.60   3780363.30        0.05862
(11111724)
        468331.70   3780432.70        0.10298  (11122624)                468270.40   3780511.70        0.12211
(11112724)
        468209.00   3780590.70        0.12288  (11121924)                468147.70   3780669.70        0.07870
(11112424)
        468086.40   3780748.70        0.04990c (11022224)                468062.30   3780779.70        0.04497
(11121324)
        468110.10   3780817.10        0.06718  (11111924)                468188.90   3780878.70        0.07575m
(10121824)
        468267.70   3780940.20        0.07495  (10111524)                468346.50   3781001.80        0.05124
(11092224)
        468425.20   3781063.40        0.04502m (11070724)                468504.00   3781125.00        0.04832
(11032824)
        468566.50   3781554.60        0.01983  (10081724)                468657.50   3781435.30        0.02400
(11082124)
        468687.80   3781395.60        0.02884  (11082124)                468687.80   3781395.60        0.02884
(11082124)
        468718.10   3781355.70        0.03411m (11081624)                468778.70   3781276.20        0.04024m
(11081524)
        468809.00   3781236.50        0.05250m (11081524)                468839.30   3781196.70        0.05411m
(11081524)
        468869.60   3781157.00        0.04880m (11081524)                468869.70   3781156.90        0.04878m
(11081524)
        468900.00   3781117.20        0.04696m (11081424)                468930.30   3781077.40        0.03999m
(11081524)
        468960.60   3781037.70        0.03076m (11081524)                469021.20   3780958.10        0.02610m
(11081624)
        469051.60   3780918.40        0.02297m (11081624)                469112.10   3780838.90        0.01836
(11051824)
        469112.20   3780838.80        0.01835  (11051824)                469142.50   3780799.10        0.01770
(11061224)
        469172.80   3780759.30        0.01522  (11061224)                469203.10   3780719.60        0.01214
(11061224)
        469263.80   3780640.00        0.00804  (11111324)                469267.20   3780635.50        0.00801
(11111224)
        469231.50   3780609.40        0.01165  (11111224)                469069.90   3780491.40        0.01382
(11111224)
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
     05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
   15:16:06

   PAGE  15
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL
```

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
469029.60	3780462.00	0.01318	(10121524)	468908.40	3780373.50	0.01351	(11030624)
468868.00	3780344.00	0.01815	(10052924)	468787.30	3780285.10	0.01492	(11082624)
468746.90	3780255.60	0.01637	(10022024)	468625.70	3780167.10	0.01709	(10082224)
468585.30	3780137.70	0.02270m	(11031824)	468545.00	3780108.20	0.02429m	(11031824)
468423.80	3780019.70	0.02865m	(10123124)	468383.40	3779990.20	0.02606m	(10123124)
468327.30	3779949.30	0.02502	(11031024)	468308.60	3779973.30	0.02647	(11031024)
468277.90	3780012.80	0.03090	(11111724)	468277.90	3780012.90	0.03091	(11111724)
468277.90	3780012.90	0.03091	(11111724)	468247.30	3780052.30	0.03551	(11111724)
468216.60	3780091.90	0.03656	(11111724)	468185.90	3780131.30	0.04279	(11122624)
468155.30	3780170.80	0.05039	(11122624)	468155.30	3780170.80	0.05039	(11122624)
468155.20	3780170.90	0.05040	(11122624)	468063.30	3780289.30	0.04838	(11112724)
468032.60	3780328.80	0.04655	(11112724)	468001.90	3780368.20	0.04363	(11121924)
467971.30	3780407.70	0.05178	(11121924)	467971.20	3780407.80	0.05178	(11121924)
467909.90	3780486.70	0.04077	(10121324)	467909.90	3780486.70	0.04077	(10121324)
467909.90	3780486.80	0.04077	(10121324)	467879.30	3780526.20	0.03368	(10121324)
467848.60	3780565.80	0.03365m	(10110924)	467817.90	3780605.20	0.03102	(11111224)
467787.30	3780644.70	0.02570	(11013024)	467787.30	3780644.70	0.02570	(11013024)
467787.20	3780644.80	0.02569	(11013024)	467695.30	3780763.20	0.02188c	(11022224)
467664.60	3780802.70	0.01776	(11031424)	467641.90	3780831.90	0.01586	(11121924)
467652.10	3780839.90	0.01616	(11121324)	467691.60	3780870.70	0.02033	(11010724)
467770.30	3780932.30	0.02579	(11111924)	467770.30	3780932.30	0.02579	(11111924)
467809.70	3780963.10	0.03214	(11111924)	467849.10	3780993.80	0.03455	(11111924)
467849.20	3780993.90	0.03455	(11111924)	467888.50	3781024.60	0.03069	(11111924)
467927.80	3781055.40	0.02594m	(10121824)	467927.90	3781055.50	0.02592m	(10121824)
467927.90	3781055.50	0.02592m	(10121824)	468085.40	3781178.70	0.03415	(10111524)
468085.50	3781178.70	0.03414	(10111524)	468164.20	3781240.20	0.02167m	(10082524)
468164.30	3781240.30	0.02167m	(10082524)	468203.60	3781270.90	0.02222	(11092224)

468243.10	3781301.80	0.02023	(11092224)	468243.10	3781301.80	0.02023	(11092224)
468400.60	3781424.90	0.01769	(11052824)	468400.70	3781425.00	0.01769	(11052824)
468479.50	3781486.50	0.01886m	(11070724)	468518.80	3781517.30	0.01830	(10081724)
468558.20	3781548.00	0.01982	(10081724)	468558.20	3781548.00	0.01982	(10081724)
468558.30	3781548.10	0.01982	(10081724)	467770.30	3780932.30	0.02579	(11111924)
467809.70	3780963.10	0.03214	(11111924)	467849.10	3780993.80	0.03455	(11111924)
467849.20	3780993.90	0.03455	(11111924)	467888.50	3781024.60	0.03069	(11111924)
467927.80	3781055.40	0.02594m	(10121824)	467927.90	3781055.50	0.02592m	(10121824)
468006.70	3781117.10	0.03206	(10111524)	468085.50	3781178.70	0.03414	(10111524)
468164.20	3781240.20	0.02167m	(10082524)	468164.30	3781240.30	0.02167m	(10082524)
468203.60	3781270.90	0.02222	(11092224)	468243.10	3781301.80	0.02023	(11092224)
468321.90	3781363.40	0.01770m	(11041424)	468400.70	3781425.00	0.01769	(11052824)
468479.50	3781486.50	0.01886m	(11070724)	468518.80	3781517.30	0.01830	(10081724)

↑ *** AERMOD - VERSION 15181 *** *** PM10 exhaust only Tier IV *** 05/05/16
*** AERMET - VERSION 14134 *** *** *** 15:16:06

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**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FUDT901U ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
468558.20	3781548.00	0.01982	(10081724)	468558.30	3781548.10	0.01982	(10081724)
468484.80	3780919.60	0.14280	(11032824)	468545.40	3780840.00	0.24771m	(11081524)
468606.00	3780760.50	0.10122	(11061224)	468630.80	3780728.00	0.07086	(11061224)
468583.00	3780693.10	0.07600	(11051024)	468502.30	3780634.20	0.10556m	(10123124)
468421.50	3780575.20	0.15305	(11122624)	468414.80	3780570.30	0.15941	(11122624)
468358.60	3780642.70	0.24009	(11121924)	468297.20	3780721.70	0.18666	(11013024)
468272.40	3780753.60	0.14804	(11013024)	468319.40	3780790.30	0.17897	(11111924)
468398.20	3780851.90	0.11898	(11092224)	468477.00	3780913.40	0.14248	(11032824)

↑ *** AERMOD - VERSION 15181 *** *** PM10 exhaust only Tier IV *** 05/05/16
*** AERMET - VERSION 14134 *** *** *** 15:16:06

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**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 2 YEARS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

NETWORK GROUP ID GRID-ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE
ALL	1ST HIGHEST VALUE IS	0.07451	AT (468363.00, 3780677.70, 1.50, 0.00, 0.00)	DC
	2ND HIGHEST VALUE IS	0.06249	AT (468540.90, 3780804.80, 1.50, 0.00, 0.00)	DC
	3RD HIGHEST VALUE IS	0.06048	AT (468358.60, 3780642.70, 1.50, 0.00, 0.00)	DC
	4TH HIGHEST VALUE IS	0.05363	AT (468545.40, 3780840.00, 1.50, 0.00, 0.00)	DC
	5TH HIGHEST VALUE IS	0.04425	AT (468393.70, 3780816.60, 1.50, 0.00, 0.00)	DC
	6TH HIGHEST VALUE IS	0.04215	AT (468419.60, 3780604.80, 1.50, 0.00, 0.00)	DC
	7TH HIGHEST VALUE IS	0.04209	AT (468425.90, 3780609.30, 1.50, 0.00, 0.00)	DC
	8TH HIGHEST VALUE IS	0.03877	AT (468314.90, 3780755.00, 1.50, 0.00, 0.00)	DC
	9TH HIGHEST VALUE IS	0.03828	AT (468472.50, 3780878.20, 1.50, 0.00, 0.00)	DC
	10TH HIGHEST VALUE IS	0.03814	AT (468297.20, 3780721.70, 1.50, 0.00, 0.00)	DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** AERMOD - VERSION 15181 *** *** PM10 exhaust only Tier IV ***
05/05/16
*** AERMET - VERSION 14134 *** *** ***
15:16:06

PAGE 18
**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

NETWORK GROUP ID OF TYPE GRID-ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)
ALL	HIGH 1ST HIGH VALUE IS	0.66953	ON 10090303:	AT (468307.50, 3780749.30, 1.50, 0.00, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR

```
                    DC = DISCCART
                    DP = DISCPOLR
↑ *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                       ***
    05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                  ***
   15:16:06

   PAGE  19
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                                   *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                     ** CONC OF PM10     IN MICROGRAMS/M**3                          **

                                                     DATE
          NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)
 OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       0.29192  ON 11121924: AT (  468363.00,  3780677.70,     1.50,     0.00,
0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                       ***
    05/05/16
 *** AERMET - VERSION  14134 ***   ***                                                                  ***
   15:16:06

   PAGE  20
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of           0 Fatal Error Message(s)
 A Total of           0 Warning Message(s)
 A Total of        1086 Informational Message(s)

 A Total of       17520 Hours Were Processed

 A Total of           5 Calm Hours Identified

 A Total of         533 Missing Hours Identified (  3.04 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

ATTACHMENT E

PM_{10} Onsite Exhaust Cancer Risk Calculations

Air Quality Health Risk Calculations

		Tier IV - 150K Distribution
From CalEE Annual Output	Emission per day (Ton/Total Construction Duration)	**0.00188**
	Number of Workdays	**260**
	Emission per day (lb/day)	**0.014461538**
	Construction day (Hours)	**8**
	Emission Rate (Grams/Second)	**0.000227468**
	Project Site Size (Acres)	**8.1**
	Project Site Size (meters	**32779.53702**
	Length of Smalles Side (meters)	**181.0512**
Used as an input to Screen3	Emission Rate over Grading Area	**6.93933E-09**
	Concentration Annual	**0.04**

New Method based on Risk Assessment Guidelines - Guidance Manual for Preparation of Health Risk Assessments - February 2015

Page 5-1 Calculate Point of Maximum Impact and Maximally Exposed Individual Resident

1st find Dose (Equation 5.4.1.1) Page 5-24 5.4 Estimation of Dose
2nd

	Construction Days	Construction Days converted to years				
Duration	260	0.712328767				
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From F15	0.04	0.04	0.04	0.04	0.04	0.04
Breathing Rate per agegroup BR/BW (Page 5-25)	361	1090	861	745	335	290
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00001386	0.00004186	0.00003306	0.00002861	0.00001286	0.00001114

8.2.4 Calculating Residential and Offsite Worker Inhalation Cancer Risk

Equation 8.2.4 A Page 8-7

Construction Days	260	0.712328767				
potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	11	12	13	14
ED	0.25	0.712328767	0.712328767	0.712328767	0.712328767	0.712328767
AT	70	70	70	70	70	70
FAH (USE 1 if School for 3rd and 2-9) Page 8-5	0.85	0.85	0.72	0.72	0.73	0.73
Risk for Each Age Group	4.62905E-07	3.98246E-06	2.93113E-06	2.76679E-06	1.36652E-06	1.27396E-06
	0.462905143	3.982463249	2.931127338	2.766791089	1.366524343	1.2739584

Cancer Risk Per Million 9-years	7.38
Cancer Risk Per Million 30-years	8.58
Cancer Risk Per Million 70-years	8.49

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May 9, 2016

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Kimley-Horn
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RE: 150K Distribution Center Health Risk Screening Letter

The purpose of this Air Quality Heath Risk screening letter is to identify potential health risks at the proposed project site from toxic air contaminants (specifically Diesel Particulates) from the onsite loading area. The Project proposes to construct a 153,010 square foot (SF) building for warehouse/distribution of which approximately 5,000 SF would be used for office space on 8.1 acre site within the City of San Bernardino. The proposed Project site is located between Georgia Boulevard and Cajon Boulevard.

This health risk analysis uses the California Office of Environmental Health Hazard Assessment (OEHHA) methodologies (Office of Environmental Health Hazard Assessment, 2015) as outlined by the California Air Pollution Control Officers Association (CAPCOA, July 2009). Health risk impacts are generally broken up into two various types. Projects which have the potential to emit toxic emissions and have the potential to impact nearby receptors and projects which add receptors in the vicinity of existing toxic sources like freeways, high traffic roads or rail yards. Based on this information the analysis within this study focuses on nearby residential receptors which may be exposed by the distribution center.

Projects within the City of San Bernardino air are generally regulated by South Coast Air Quality Management District (SCAQMD). Significance thresholds have been generally established under SCAQMDs control strategies for reducing cumulative impacts from air pollution (SCAQMD, 2003). One source of emissions contributing to a cumulative impact is ground support operations associated with cargo sorting and transport within ports, rail yards, and distribution centers. From SCAQMD Rule 1401, a project shall not be approved if the cancer risk in increased to greater that 10 in one million assuming control technology (TBACT) is used (SCAQMD, 2015).

Cancer risk calculations are based on a 70 year lifetime exposure. In some limited cases, it may be appropriate to also use between 9 to 40 years exposure in the calculation. The 9 year exposure scenario is based on exposure to children during the first 9 years of life. Some districts use the 9 year exposure scenario to model short term projects. (CAPCOA, July 2009).

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For purposes of this analysis, it is reasonable to assume a 30 or 70 year duration. For purposes of modeling, the AERMOD model was utilized to predict offsite diesel particulate concentrations at nearby residential receptors. The model input/output file is shown in ***Attachment A*** to this letter.

Based on review of the project traffic study the project would likely have 80.3% passenger vehicle and 19.7% heavy trucks. The study indicated that there would be 55 4-axel trips, 25 3-axel trips and 28 2-axel trips. Based on this, there will be 108 two way trips or 54 round trips (Kimley Horn, 2016). Each round trip would generate no more than 5 minutes of idling onsite. Idling emission onsite are expected to be 0.2 grams per hour (US EPA, 2015). 54 point sources were modeled within the distribution truck loading dock areas using the EPAs idling emission rates using the EPAs data. Also, it's assumed that the vast majority of trucks using the site would be newer than 2007.

Modeling at the site included receptor locations 20, 50, 100, 200 and 500 meters from the edge of the project site. The exact inputs are shown in the AERMOD model which is again shown in Attachment A. A graphical representation of the modeling locations is shown in Figure 1 on the following page. Based on the data, the nearest residential units would be exposed to approximately 0.00096 $\mu g/m^3$ concentrations of diesel particulate matter which was normalized over a 365 day scenario assuming 247 days of active use.

After the dispersed concentrations of diesel particulates are estimated in the surrounding air, they are used to evaluate estimated exposure to people. Exposure is evaluated by calculating the dose in milligrams per kilogram body weight per day (mg/kg/d). For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. It should be noted however, that residents of the proposed facility would not be less than 16 years old so only the 16-70 year bin is considered. The following algorithms calculate this dose for exposure through the inhalation pathways. The worst case cancer risk dose calculation is defined in Equation 1 below (OEHHA, 2015):

Equation 1 $$Dose_{air}=C_{air}*(BR/BW)*A*EF*(1x10^{-6})$$

$Dose_{air}$	=	Dose through inhalation (mg/kg/d)
C_{air}	=	Concentration in air (µg/m3) Annual average DPM concentration in µg/m3 –AERMOD
BR/BW	=	Daily breathing rate normalized to body weight (L/kg BW-day). See Table I.2 for the daily breathing rate for each age range.
A	=	Inhalation absorption factor (assumed to be 1)
EF	=	Exposure frequency (unitless, days/365 days)
1x10-6	=	Milligrams to micrograms conversion (10^{-3} mg/ µg), cubic meters to liters conversion (10^{-3} m^3/l)

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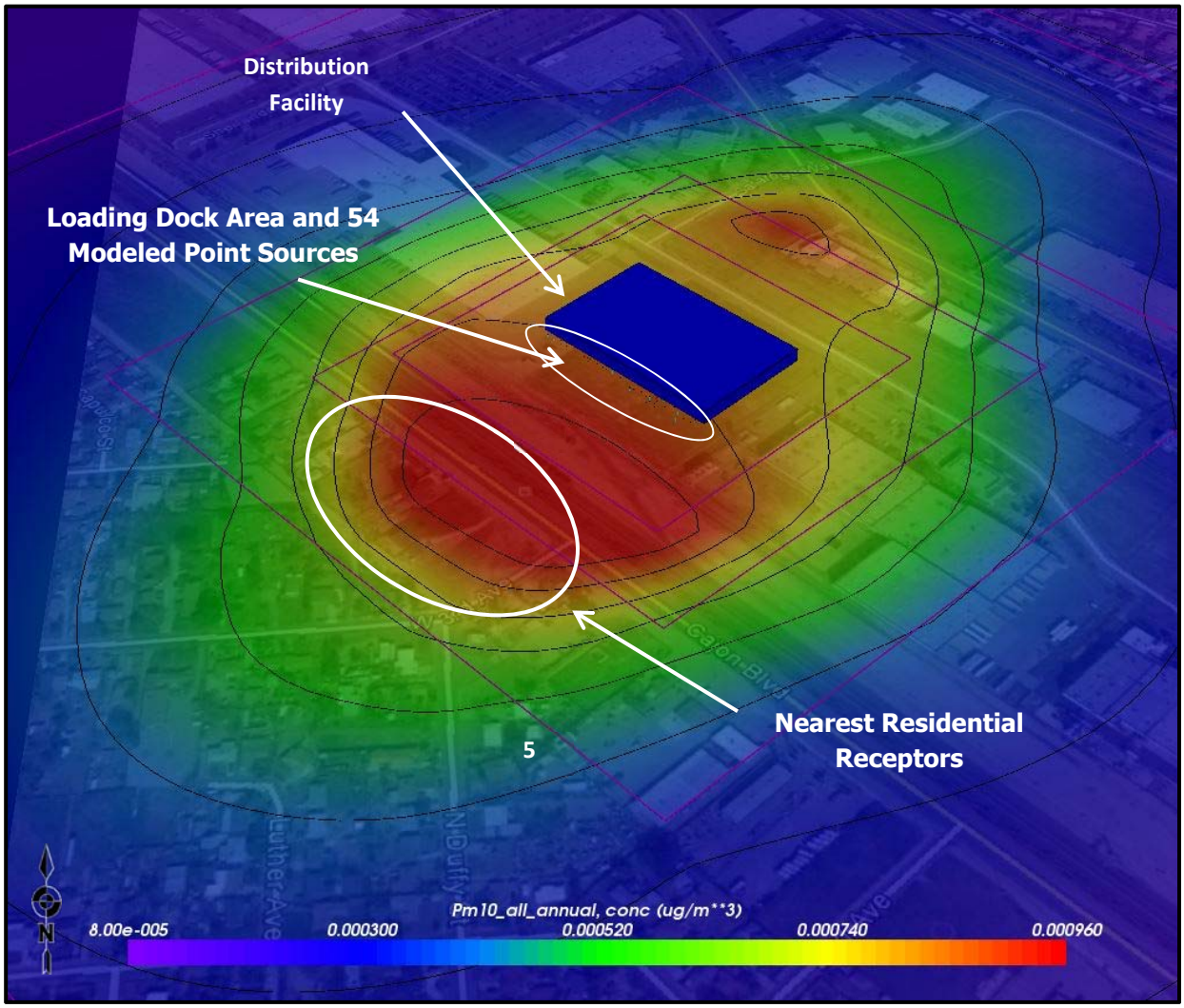
Figure 1: Modeling Graphical Representation



After the dose is determined then you must calculate the cancer risk. The average daily inhalation dose (mg/kg-day) multiplied by the cancer potency factor (mg/kg-day)-1 will give the inhalation cancer risk (unitless), which is an expression of the chemical's cancer risk during a 70-year lifespan of exposure. For example, an inhalation cancer risk of 5 x 10-6 is the same as stating that an individual has an estimated probability of developing cancer from their exposure of 5 chances per million people exposed.

Cancer risk is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor, the frequency of time spent at home and the exposure

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duration divided by averaging time, to yield the excess cancer risk. As described below, the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk for any given location. Specific factors as modeled are shown within the project models attached to this report. The worst case cancer risk calculation is defined in Equation 2 below and calculations for each receptor point are shown in ***Attachment B*** to this report (OEHHA, 2015):

Equation 2

$$RISKinh\text{-}res = DOSEair \times CPF \times ASF \times ED/AT \times FAH$$

RISKinh-res	=	Residential inhalation cancer risk
DOSEair	=	Daily inhalation dose (mg/kg-day)
CPF	=	Inhalation cancer potency factor ($mg/kg\text{-}day^{-1}$)
ASF	=	Age sensitivity factor for a specified age group (unitless)
ED	=	Exposure duration (in years) for a specified age group
AT	=	Averaging time for lifetime cancer risk (years)
FAH	=	Fraction of time spent at home (unitless)

Table 1 below shows the cancer risks at the worst case receptor. Based on this, the structure would be located in area where increased cancer risks exceed 10 in one million which would be considered significant. The operational Cancer risks would be reduced to no more than 3.90 per one million persons exposed over a 70 year period. Given this, no health risk impacts would be expected.

Table 1: Cancer Risk at Worst Case Exposure Location

	Worst Case Receptor
Cancer Risk	**DOSEair × CPF × ASF × ED/AT × FAH**
C_i	**0.00096 µg/m^3**
Cancer Risk 30-Year	**2.23**
Cancer Risk 70-Year	**3.90**
C_i annual inputs from AERMOD	

It is important to note that this assessment should serve as a disclosure document to providing a characterization of the background emissions may occur from the proposed project

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operations. If you should have any questions regarding this assessment, please do not hesitate to contact me at (760) 473-1253.

Sincerely,
Ldn Consulting, Inc.

Jeremy Louden

References:

CAPCOA. (July 2009). *Health Risk Assessment for Proposed Land Use Projects.* California Air Pollution Control Officers Association .

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Attachment A: AERMOD Input/Output File

Attachment B: Cancer Risk Calculations (Unmitigated Scenario)

```
                                                HR Attachment A
                    AERMOD PRIME - (DATED  15181)

                    AERMODPrMSPx VERSION
             (C) COPYRIGHT 1998-2015, Trinity Consultants

 Run Began on  5/08/2016 at 16:58:03

** BREEZE AERMOD
** Trinity Consultants
** VERSION  7.10

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CO TITLEONE  PM10 exhaust only Tier IV
CO MODELOPT  DFAULT  CONC
CO RUNORNOT  RUN
CO AVERTIME  1  24  ANNUAL
CO POLLUTID  PM10
CO FINISHED

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                                                    HR Attachment A
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SO XBADJ	Q4OAY00D	3.86	2.89	1.83	0.71	-0.42	-1.55
SO XBADJ	Q4OAY00D	-2.63	-3.63	-19.49	-36.43	-52.26	-66.50
SO XBADJ	Q4OAY00D	-78.72	-88.55	-95.69	-99.92	-101.12	-122.55
SO XBADJ	Q4OAY00D	-142.86	-158.83	-169.97	-175.95	-176.58	-171.84
SO XBADJ	Q4OAY00D	-161.89	-147.01	-142.65	-135.61	-124.46	-109.52
SO YBADJ	Q4OAY00D	-88.33	-88.08	-85.15	-79.63	-71.69	-61.58
SO YBADJ	Q4OAY00D	-49.59	-36.10	-21.51	-6.27	9.17	24.32
SO YBADJ	Q4OAY00D	38.74	51.98	63.64	73.36	80.86	85.90
SO YBADJ	Q4OAY00D	88.33	88.08	85.15	79.63	71.69	61.58
SO YBADJ	Q4OAY00D	49.59	36.10	21.51	6.27	-9.17	-24.32
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SO BUILDHGT	SFQ5F000	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F000	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F000	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F000	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F000	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F000	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F000	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F000	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F000	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F000	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F000	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F000	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F000	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F000	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F000	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F000	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F000	-88.47	-68.04	-45.54	-21.65	2.89	4.03
SO XBADJ	SFQ5F000	2.46	0.81	-0.87	-2.52	-4.09	-5.54
SO XBADJ	SFQ5F000	-6.82	-7.89	-23.70	-40.45	-55.98	-69.80
SO XBADJ	SFQ5F000	-81.50	-90.73	-97.20	-100.71	-101.17	-121.87
SO XBADJ	SFQ5F000	-141.45	-156.74	-167.27	-172.71	-172.91	-167.86
SO XBADJ	SFQ5F000	-157.70	-142.75	-138.44	-131.59	-120.74	-106.22
SO YBADJ	SFQ5F000	-85.10	-84.41	-81.16	-75.44	-67.43	-57.37
SO YBADJ	SFQ5F000	-45.57	-32.38	-18.21	-3.49	11.34	25.83
SO YBADJ	SFQ5F000	39.53	52.03	62.95	71.95	78.77	83.20
SO YBADJ	SFQ5F000	85.10	84.41	81.16	75.44	67.43	57.37
SO YBADJ	SFQ5F000	45.57	32.38	18.21	3.49	-11.34	-25.83
SO YBADJ	SFQ5F000	-39.53	-52.03	-62.95	-71.95	-78.77	-83.20
SO BUILDHGT	SFQ5F001	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F001	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F001	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F001	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F001	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F001	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F001	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F001	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F001	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F001	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F001	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F001	122.37	98.28	117.83	139.00	155.94	168.14

SO	BUILDLEN	SFQ5F001	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F001	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F001	164.52	150.64	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F001	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F001	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F001	164.52	150.64	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F001	-85.28	-65.64	-44.01	-21.05	2.56	2.78
SO	XBADJ	SFQ5F001	0.31	-2.16	-4.57	-6.84	-8.90	-10.69
SO	XBADJ	SFQ5F001	-12.16	-13.26	-28.93	-45.38	-60.46	-73.70
SO	XBADJ	SFQ5F001	-84.70	-93.13	-98.73	-101.32	-100.84	-120.61
SO	XBADJ	SFQ5F001	-139.31	-153.78	-163.57	-168.39	-168.10	-162.70
SO	XBADJ	SFQ5F001	-152.36	-137.38	-133.21	-126.66	-116.25	-102.32
SO	YBADJ	SFQ5F001	-80.78	-79.60	-76.00	-70.10	-62.06	-52.14
SO	YBADJ	SFQ5F001	-40.64	-27.90	-14.31	-0.29	13.74	27.36
SO	YBADJ	SFQ5F001	40.14	51.70	61.69	69.81	75.81	79.50
SO	YBADJ	SFQ5F001	80.78	79.60	76.00	70.10	62.06	52.14
SO	YBADJ	SFQ5F001	40.64	27.90	14.31	0.29	-13.74	-27.36
SO	YBADJ	SFQ5F001	-40.14	-51.70	-61.69	-69.81	-75.81	-79.50
SO	BUILDHGT	SFQ5F002	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F002	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F002	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F002	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F002	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F002	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F002	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F002	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F002	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F002	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F002	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F002	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F002	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F002	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F002	164.52	150.64	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F002	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F002	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F002	164.52	150.64	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F002	-82.23	-63.55	-42.93	-21.01	1.54	0.74
SO	XBADJ	SFQ5F002	-2.68	-6.01	-9.17	-12.05	-14.56	-16.63
SO	XBADJ	SFQ5F002	-18.19	-19.20	-34.60	-50.62	-65.10	-77.60
SO	XBADJ	SFQ5F002	-87.74	-95.22	-99.80	-101.35	-99.83	-118.58
SO	XBADJ	SFQ5F002	-136.32	-149.92	-158.97	-163.19	-162.44	-156.77
SO	XBADJ	SFQ5F002	-146.33	-131.44	-127.53	-121.42	-111.62	-98.42
SO	YBADJ	SFQ5F002	-75.57	-73.94	-70.07	-64.07	-56.12	-46.47
SO	YBADJ	SFQ5F002	-35.40	-23.26	-10.41	2.75	15.84	28.43
SO	YBADJ	SFQ5F002	40.17	50.69	59.66	66.82	71.95	74.90
SO	YBADJ	SFQ5F002	75.57	73.94	70.07	64.07	56.12	46.47
SO	YBADJ	SFQ5F002	35.40	23.26	10.41	-2.75	-15.84	-28.43
SO	YBADJ	SFQ5F002	-40.17	-50.69	-59.66	-66.82	-71.95	-74.90
SO	BUILDHGT	SFQ5F003	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F003	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F003	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F003	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F003	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F003	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F003	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F003	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F003	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F003	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F003	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F003	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F003	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F003	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F003	164.52	150.64	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F003	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F003	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F003	164.52	150.64	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F003	-79.48	-61.52	-41.69	-20.60	1.13	-0.50

SO XBADJ	SFQ5F003	-4.71	-8.77	-12.57	-15.99	-18.92	-21.27
SO XBADJ	SFQ5F003	-22.98	-23.99	-39.25	-54.98	-69.04	-81.00
SO XBADJ	SFQ5F003	-90.50	-97.25	-101.05	-101.77	-99.41	-117.33
SO XBADJ	SFQ5F003	-134.29	-147.17	-155.57	-159.25	-158.09	-152.12
SO XBADJ	SFQ5F003	-141.54	-126.65	-122.89	-117.06	-107.68	-95.02
SO YBADJ	SFQ5F003	-71.63	-69.59	-65.43	-59.28	-51.33	-41.82
SO YBADJ	SFQ5F003	-31.04	-19.32	-7.01	5.51	17.87	29.68
SO YBADJ	SFQ5F003	40.59	50.27	58.42	64.79	69.20	71.50
SO YBADJ	SFQ5F003	71.63	69.59	65.43	59.28	51.33	41.82
SO YBADJ	SFQ5F003	31.04	19.32	7.01	-5.51	-17.87	-29.68
SO YBADJ	SFQ5F003	-40.59	-50.27	-58.42	-64.79	-69.20	-71.50
SO BUILDHGT	SFQ5F004	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F004	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F004	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F004	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F004	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F004	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F004	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F004	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F004	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F004	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F004	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F004	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F004	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F004	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F004	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F004	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F004	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F004	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F004	-73.86	-57.06	-38.52	-18.82	1.46	-1.62
SO XBADJ	SFQ5F004	-7.24	-12.65	-17.67	-22.15	-25.97	-28.99
SO XBADJ	SFQ5F004	-31.13	-32.32	-47.51	-62.92	-76.42	-87.60
SO XBADJ	SFQ5F004	-96.12	-101.71	-104.21	-103.55	-99.74	-116.22
SO XBADJ	SFQ5F004	-131.75	-143.29	-150.47	-153.08	-151.04	-144.41
SO XBADJ	SFQ5F004	-133.39	-118.31	-114.62	-109.12	-100.29	-88.42
SO YBADJ	SFQ5F004	-65.46	-62.54	-57.71	-51.13	-43.00	-33.56
SO YBADJ	SFQ5F004	-23.10	-11.93	-0.41	11.13	22.32	32.84
SO YBADJ	SFQ5F004	42.37	50.60	57.30	62.26	65.32	66.40
SO YBADJ	SFQ5F004	65.46	62.54	57.71	51.13	43.00	33.56
SO YBADJ	SFQ5F004	23.10	11.93	0.41	-11.13	-22.32	-32.84
SO YBADJ	SFQ5F004	-42.37	-50.60	-57.30	-62.26	-65.32	-66.40
SO BUILDHGT	SFQ5F005	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F005	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F005	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F005	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F005	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F005	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F005	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F005	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F005	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F005	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F005	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F005	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F005	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F005	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F005	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F005	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F005	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F005	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F005	-71.13	-54.87	-36.95	-17.91	1.68	-2.10
SO XBADJ	SFQ5F005	-8.40	-14.46	-20.07	-25.07	-29.32	-32.67
SO XBADJ	SFQ5F005	-35.02	-36.32	-51.49	-66.75	-79.99	-90.80
SO XBADJ	SFQ5F005	-98.85	-103.90	-105.79	-104.46	-99.96	-115.74
SO XBADJ	SFQ5F005	-130.59	-141.48	-148.07	-150.16	-147.69	-140.73
SO XBADJ	SFQ5F005	-129.49	-114.32	-110.65	-105.29	-96.72	-85.22
SO YBADJ	SFQ5F005	-62.54	-59.19	-54.03	-47.23	-39.00	-29.58
SO YBADJ	SFQ5F005	-19.27	-8.37	2.79	13.86	24.51	34.42

SO YBADJ	SFQ5F005	43.28	50.82	56.82	61.09	63.51	64.00
SO YBADJ	SFQ5F005	62.54	59.19	54.03	47.23	39.00	29.58
SO YBADJ	SFQ5F005	19.27	8.37	-2.79	-13.86	-24.51	-34.42
SO YBADJ	SFQ5F005	-43.28	-50.82	-56.82	-61.09	-63.51	-64.00
SO BUILDHGT	SFQ5F006	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F006	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F006	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F006	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F006	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F006	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F006	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F006	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F006	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F006	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F006	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F006	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F006	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F006	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F006	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F006	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F006	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F006	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F006	-68.16	-52.62	-35.48	-17.27	1.47	-3.15
SO XBADJ	SFQ5F006	-10.27	-17.08	-23.37	-28.95	-33.65	-37.32
SO XBADJ	SFQ5F006	-39.87	-41.20	-56.25	-71.26	-84.11	-94.40
SO XBADJ	SFQ5F006	-101.82	-106.15	-107.25	-105.10	-99.75	-114.68
SO XBADJ	SFQ5F006	-128.72	-138.86	-144.77	-146.28	-143.36	-136.07
SO XBADJ	SFQ5F006	-124.65	-109.44	-105.88	-100.78	-92.60	-81.62
SO YBADJ	SFQ5F006	-58.67	-54.85	-49.37	-42.39	-34.12	-24.82
SO YBADJ	SFQ5F006	-14.76	-4.25	6.39	16.83	26.77	35.88
SO YBADJ	SFQ5F006	43.91	50.61	55.76	59.22	60.89	60.70
SO YBADJ	SFQ5F006	58.67	54.85	49.37	42.39	34.12	24.82
SO YBADJ	SFQ5F006	14.76	4.25	-6.39	-16.83	-26.77	-35.88
SO YBADJ	SFQ5F006	-43.91	-50.61	-55.76	-59.22	-60.89	-60.70
SO BUILDHGT	SFQ5F007	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F007	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F007	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F007	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F007	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F007	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F007	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F007	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F007	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F007	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F007	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F007	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F007	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F007	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F007	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F007	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F007	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F007	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F007	-65.14	-50.37	-34.08	-16.75	1.09	-4.42
SO XBADJ	SFQ5F007	-12.39	-19.98	-26.97	-33.14	-38.30	-42.29
SO XBADJ	SFQ5F007	-45.00	-46.35	-61.26	-75.97	-88.38	-98.10
SO XBADJ	SFQ5F007	-104.84	-108.40	-108.66	-105.62	-99.37	-113.41
SO XBADJ	SFQ5F007	-126.61	-135.95	-141.17	-142.10	-138.71	-131.10
SO XBADJ	SFQ5F007	-119.51	-104.29	-100.88	-96.07	-88.34	-77.92
SO YBADJ	SFQ5F007	-54.48	-50.21	-44.41	-37.26	-28.97	-19.81
SO YBADJ	SFQ5F007	-10.05	0.02	10.09	19.85	29.01	37.29
SO YBADJ	SFQ5F007	44.43	50.23	54.50	57.11	57.98	57.10
SO YBADJ	SFQ5F007	54.48	50.21	44.41	37.26	28.97	19.81
SO YBADJ	SFQ5F007	10.05	-0.02	-10.09	-19.85	-29.01	-37.29
SO YBADJ	SFQ5F007	-44.43	-50.23	-54.50	-57.11	-57.98	-57.10
SO BUILDHGT	SFQ5F008	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F008	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F008	10.00	10.00	10.00	10.00	10.00	10.00

HR Attachment A

SO	BUILDHGT	SFQ5F008	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F008	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F008	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F008	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F008	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F008	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F008	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F008	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F008	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F008	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F008	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F008	164.52	150.64	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F008	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F008	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F008	164.52	150.64	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F008	-60.53	-46.70	-31.45	-15.25	1.42	-5.27
SO	XBADJ	SFQ5F008	-14.40	-23.08	-31.07	-38.11	-44.00	-48.54
SO	XBADJ	SFQ5F008	-51.61	-53.12	-67.98	-82.45	-94.41	-103.50
SO	XBADJ	SFQ5F008	-109.45	-112.07	-111.28	-107.12	-99.70	-112.56
SO	XBADJ	SFQ5F008	-124.60	-132.85	-137.07	-137.12	-133.01	-124.85
SO	XBADJ	SFQ5F008	-112.90	-97.52	-94.15	-89.59	-82.31	-72.52
SO	YBADJ	SFQ5F008	-49.50	-44.51	-38.15	-30.64	-22.20	-13.09
SO	YBADJ	SFQ5F008	-3.57	6.05	15.49	24.46	32.68	39.91
SO	YBADJ	SFQ5F008	45.93	50.56	53.64	55.10	54.88	53.00
SO	YBADJ	SFQ5F008	49.50	44.51	38.15	30.64	22.20	13.09
SO	YBADJ	SFQ5F008	3.57	-6.05	-15.49	-24.46	-32.68	-39.91
SO	YBADJ	SFQ5F008	-45.93	-50.56	-53.64	-55.10	-54.88	-53.00
SO	BUILDHGT	SFQ5F009	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F009	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F009	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F009	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F009	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F009	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F009	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F009	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F009	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F009	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F009	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F009	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F009	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F009	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F009	164.52	150.64	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F009	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F009	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F009	164.52	150.64	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F009	-57.14	-44.11	-29.75	-14.49	1.22	-6.43
SO	XBADJ	SFQ5F009	-16.47	-26.02	-34.77	-42.47	-48.87	-53.80
SO	XBADJ	SFQ5F009	-57.08	-58.64	-73.38	-87.57	-99.09	-107.60
SO	XBADJ	SFQ5F009	-112.84	-114.65	-112.98	-107.88	-99.50	-111.41
SO	XBADJ	SFQ5F009	-122.53	-129.92	-133.37	-132.77	-128.13	-119.60
SO	XBADJ	SFQ5F009	-107.43	-92.00	-88.75	-84.47	-77.63	-68.42
SO	YBADJ	SFQ5F009	-45.15	-39.63	-32.90	-25.17	-16.68	-7.68
SO	YBADJ	SFQ5F009	1.55	10.73	19.59	27.85	35.27	41.62
SO	YBADJ	SFQ5F009	46.70	50.36	52.49	53.03	51.95	49.30
SO	YBADJ	SFQ5F009	45.15	39.63	32.90	25.17	16.68	7.68
SO	YBADJ	SFQ5F009	-1.55	-10.73	-19.59	-27.85	-35.27	-41.62
SO	YBADJ	SFQ5F009	-46.70	-50.36	-52.49	-53.03	-51.95	-49.30
SO	BUILDHGT	SFQ5F00A	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00A	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00A	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00A	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00A	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00A	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F00A	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00A	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00A	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F00A	175.23	177.00	173.39	164.52	150.64	162.14

SO BUILDWID	SFQ5F00A	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00A	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00A	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00A	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00A	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00A	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00A	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00A	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00A	-54.02	-41.48	-27.67	-13.03	2.01	-6.32
SO XBADJ	SFQ5F00A	-17.06	-27.28	-36.67	-44.95	-51.86	-57.19
SO XBADJ	SFQ5F00A	-60.79	-62.54	-77.37	-91.51	-102.87	-111.10
SO XBADJ	SFQ5F00A	-115.96	-117.29	-115.07	-109.34	-100.29	-111.51
SO XBADJ	SFQ5F00A	-121.94	-128.66	-131.47	-130.29	-125.15	-116.20
SO XBADJ	SFQ5F00A	-103.73	-88.10	-84.77	-80.53	-73.85	-64.92
SO YBADJ	SFQ5F00A	-42.67	-36.64	-29.50	-21.47	-12.78	-3.70
SO YBADJ	SFQ5F00A	5.49	14.51	23.09	30.97	37.91	43.70
SO YBADJ	SFQ5F00A	48.16	51.15	52.59	52.44	50.69	47.40
SO YBADJ	SFQ5F00A	42.67	36.64	29.50	21.47	12.78	3.70
SO YBADJ	SFQ5F00A	-5.49	-14.51	-23.09	-30.97	-37.91	-43.70
SO YBADJ	SFQ5F00A	-48.16	-51.15	-52.59	-52.44	-50.69	-47.40
SO BUILDHGT	SFQ5F00B	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00B	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00B	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00B	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00B	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00B	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F00B	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00B	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00B	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00B	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00B	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00B	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00B	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00B	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00B	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00B	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00B	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00B	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00B	-45.35	-34.70	-23.00	-10.60	2.12	-8.53
SO XBADJ	SFQ5F00B	-21.52	-33.86	-45.17	-55.11	-63.37	-69.70
SO XBADJ	SFQ5F00B	-73.92	-75.89	-90.54	-104.09	-114.49	-121.40
SO XBADJ	SFQ5F00B	-124.63	-124.07	-119.74	-111.77	-100.40	-109.30
SO XBADJ	SFQ5F00B	-117.47	-122.08	-122.97	-120.13	-113.64	-103.69
SO XBADJ	SFQ5F00B	-90.59	-74.75	-71.60	-67.95	-62.23	-54.62
SO YBADJ	SFQ5F00B	-32.51	-25.13	-16.99	-8.34	0.57	9.47
SO YBADJ	SFQ5F00B	18.07	26.13	33.39	39.64	44.68	48.37
SO YBADJ	SFQ5F00B	50.58	51.26	50.38	47.97	44.11	38.90
SO YBADJ	SFQ5F00B	32.51	25.13	16.99	8.34	-0.57	-9.47
SO YBADJ	SFQ5F00B	-18.07	-26.13	-33.39	-39.64	-44.68	-48.37
SO YBADJ	SFQ5F00B	-50.58	-51.26	-50.38	-47.97	-44.11	-38.90
SO BUILDHGT	SFQ5F00C	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00C	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00C	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00C	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00C	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00C	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F00C	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00C	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00C	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00C	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00C	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00C	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00C	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00C	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00C	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00C	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00C	139.00	155.94	168.14	175.23	177.00	173.39

SO BUILDLEN	SFQ5F00C	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00C	-42.55	-32.79	-22.03	-10.61	1.14	-10.46
SO XBADJ	SFQ5F00C	-24.33	-37.47	-49.47	-59.97	-68.64	-75.23
SO XBADJ	SFQ5F00C	-79.53	-81.42	-95.80	-108.95	-118.78	-125.00
SO XBADJ	SFQ5F00C	-127.42	-125.98	-120.70	-111.76	-99.42	-107.38
SO XBADJ	SFQ5F00C	-114.66	-118.47	-118.67	-115.27	-108.36	-98.17
SO XBADJ	SFQ5F00C	-84.99	-69.22	-66.33	-63.09	-57.94	-51.02
SO YBADJ	SFQ5F00C	-27.65	-19.86	-11.47	-2.73	6.10	14.73
SO YBADJ	SFQ5F00C	22.93	30.42	36.99	42.44	46.59	49.33
SO YBADJ	SFQ5F00C	50.58	50.28	48.46	45.16	40.50	34.60
SO YBADJ	SFQ5F00C	27.65	19.86	11.47	2.73	-6.10	-14.73
SO YBADJ	SFQ5F00C	-22.93	-30.42	-36.99	-42.44	-46.59	-49.33
SO YBADJ	SFQ5F00C	-50.58	-50.28	-48.46	-45.16	-40.50	-34.60
SO BUILDHGT	SFQ5F00D	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00D	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00D	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00D	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00D	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00D	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F00D	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00D	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00D	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00D	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00D	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00D	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00D	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00D	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00D	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00D	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00D	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00D	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00D	-31.17	-23.38	-14.88	-5.92	3.22	-11.06
SO XBADJ	SFQ5F00D	-27.59	-43.29	-57.67	-70.30	-80.79	-88.83
SO XBADJ	SFQ5F00D	-94.17	-96.64	-111.16	-123.97	-133.00	-138.00
SO XBADJ	SFQ5F00D	-138.80	-135.39	-127.86	-116.45	-101.50	-106.77
SO XBADJ	SFQ5F00D	-111.40	-112.65	-110.47	-104.93	-96.21	-84.56
SO XBADJ	SFQ5F00D	-70.35	-53.99	-50.98	-48.07	-43.71	-38.02
SO YBADJ	SFQ5F00D	-17.32	-7.71	2.13	11.91	21.32	30.09
SO YBADJ	SFQ5F00D	37.95	44.65	49.99	53.81	56.00	56.49
SO YBADJ	SFQ5F00D	55.26	52.36	47.86	41.91	34.68	26.40
SO YBADJ	SFQ5F00D	17.32	7.71	-2.13	-11.91	-21.33	-30.09
SO YBADJ	SFQ5F00D	-37.95	-44.65	-49.99	-53.81	-56.00	-56.49
SO YBADJ	SFQ5F00D	-55.26	-52.36	-47.86	-41.91	-34.68	-26.40
SO BUILDHGT	SFQ5F00E	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00E	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00E	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00E	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00E	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00E	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F00E	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00E	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00E	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00E	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00E	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00E	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00E	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00E	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00E	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00E	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00E	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00E	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00E	-34.15	-25.45	-15.97	-6.00	4.14	-9.15
SO XBADJ	SFQ5F00E	-24.76	-39.62	-53.27	-65.31	-75.36	-83.12
SO XBADJ	SFQ5F00E	-88.35	-90.91	-105.67	-118.89	-128.50	-134.20
SO XBADJ	SFQ5F00E	-135.83	-133.32	-126.77	-116.37	-102.43	-108.69
SO XBADJ	SFQ5F00E	-114.24	-116.32	-114.87	-109.93	-101.65	-90.28
SO XBADJ	SFQ5F00E	-76.16	-59.73	-56.47	-53.15	-48.22	-41.82

SO YBADJ	SFQ5F00E	-22.31	-13.14	-3.58	6.10	15.59	24.60
SO YBADJ	SFQ5F00E	32.87	40.14	46.19	50.84	53.94	55.40
SO YBADJ	SFQ5F00E	55.18	53.28	49.77	44.74	38.35	30.80
SO YBADJ	SFQ5F00E	22.31	13.14	3.58	-6.10	-15.59	-24.60
SO YBADJ	SFQ5F00E	-32.87	-40.14	-46.19	-50.84	-53.94	-55.40
SO YBADJ	SFQ5F00E	-55.18	-53.28	-49.77	-44.74	-38.35	-30.80
SO BUILDHGT	SFQ5F00F	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00F	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00F	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00F	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00F	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00F	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F00F	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00F	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00F	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00F	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00F	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00F	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00F	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00F	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00F	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00F	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00F	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00F	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00F	-4.22	-2.38	-0.48	1.44	3.32	-18.22
SO XBADJ	SFQ5F00F	-41.80	-64.11	-84.47	-102.27	-116.95	-128.09
SO XBADJ	SFQ5F00F	-135.33	-138.46	-152.36	-163.30	-169.27	-170.10
SO XBADJ	SFQ5F00F	-165.76	-156.39	-142.26	-123.81	-101.60	-99.62
SO XBADJ	SFQ5F00F	-97.20	-91.83	-83.67	-72.97	-60.05	-45.31
SO XBADJ	SFQ5F00F	-29.19	-12.18	-9.78	-8.74	-7.44	-5.92
SO YBADJ	SFQ5F00F	14.65	28.45	41.39	53.07	63.14	71.29
SO YBADJ	SFQ5F00F	77.28	80.91	82.09	80.77	77.00	70.89
SO YBADJ	SFQ5F00F	62.63	52.46	40.70	27.70	13.86	-0.40
SO YBADJ	SFQ5F00F	-14.65	-28.45	-41.39	-53.07	-63.14	-71.29
SO YBADJ	SFQ5F00F	-77.28	-80.91	-82.09	-80.77	-77.00	-70.89
SO YBADJ	SFQ5F00F	-62.63	-52.46	-40.70	-27.70	-13.86	0.40
SO BUILDHGT	SFQ5F00G	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00G	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00G	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00G	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00G	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00G	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F00G	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00G	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00G	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00G	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00G	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00G	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00G	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00G	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00G	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00G	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00G	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00G	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00G	-26.58	-19.33	-11.50	-3.31	4.97	-10.20
SO XBADJ	SFQ5F00G	-27.67	-44.29	-59.57	-73.04	-84.29	-92.97
SO XBADJ	SFQ5F00G	-98.84	-101.70	-116.44	-129.31	-138.26	-143.00
SO XBADJ	SFQ5F00G	-143.40	-139.44	-131.24	-119.06	-103.26	-107.63
SO XBADJ	SFQ5F00G	-111.33	-111.65	-108.57	-102.20	-92.72	-80.42
SO XBADJ	SFQ5F00G	-65.68	-48.94	-45.70	-42.73	-38.46	-33.02
SO YBADJ	SFQ5F00G	-14.58	-4.21	6.28	16.58	26.38	35.37
SO YBADJ	SFQ5F00G	43.29	49.90	54.99	58.41	60.05	59.87
SO YBADJ	SFQ5F00G	57.87	54.11	48.71	41.83	33.68	24.50
SO YBADJ	SFQ5F00G	14.58	4.21	-6.28	-16.58	-26.38	-35.37
SO YBADJ	SFQ5F00G	-43.29	-49.90	-54.99	-58.41	-60.05	-59.87
SO YBADJ	SFQ5F00G	-57.87	-54.11	-48.71	-41.83	-33.68	-24.50
SO BUILDHGT	SFQ5F00H	10.00	10.00	10.00	10.00	10.00	10.00

SO	BUILDHGT	SFQ5F00H	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00H	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00H	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00H	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00H	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F00H	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00H	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00H	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F00H	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00H	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00H	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F00H	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00H	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00H	164.52	150.64	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F00H	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00H	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00H	164.52	150.64	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F00H	-24.82	-18.27	-11.17	-3.72	3.84	-12.04
SO	XBADJ	SFQ5F00H	-30.14	-47.32	-63.07	-76.90	-88.40	-97.21
SO	XBADJ	SFQ5F00H	-103.06	-105.78	-120.27	-132.77	-141.23	-145.40
SO	XBADJ	SFQ5F00H	-145.15	-140.50	-131.57	-118.65	-102.12	-105.80
SO	XBADJ	SFQ5F00H	-108.86	-108.62	-105.07	-98.33	-88.61	-76.19
SO	XBADJ	SFQ5F00H	-61.46	-44.86	-41.87	-39.27	-35.49	-30.62
SO	YBADJ	SFQ5F00H	-10.72	-0.11	10.51	20.80	30.46	39.20
SO	YBADJ	SFQ5F00H	46.75	52.87	57.39	60.16	61.11	60.20
SO	YBADJ	SFQ5F00H	57.46	52.98	46.88	39.36	30.65	21.00
SO	YBADJ	SFQ5F00H	10.72	0.10	-10.51	-20.80	-30.46	-39.20
SO	YBADJ	SFQ5F00H	-46.75	-52.87	-57.39	-60.16	-61.11	-60.20
SO	YBADJ	SFQ5F00H	-57.46	-52.98	-46.88	-39.36	-30.65	-21.00
SO	BUILDHGT	SFQ5F00I	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00I	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00I	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00I	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00I	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00I	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F00I	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00I	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00I	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F00I	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00I	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00I	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F00I	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00I	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00I	164.52	150.64	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F00I	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00I	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00I	164.52	150.64	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F00I	-21.67	-15.75	-9.36	-2.69	4.07	-12.61
SO	XBADJ	SFQ5F00I	-31.50	-49.44	-65.87	-80.30	-92.29	-101.48
SO	XBADJ	SFQ5F00I	-107.58	-110.42	-124.87	-137.20	-145.36	-149.10
SO	XBADJ	SFQ5F00I	-148.31	-143.02	-133.37	-119.68	-102.35	-105.22
SO	XBADJ	SFQ5F00I	-107.50	-106.50	-102.27	-94.93	-84.71	-71.91
SO	XBADJ	SFQ5F00I	-56.93	-40.22	-37.26	-34.84	-31.36	-26.92
SO	YBADJ	SFQ5F00I	-7.32	3.79	14.78	25.33	35.10	43.81
SO	YBADJ	SFQ5F00I	51.18	57.00	61.09	63.32	63.63	62.01
SO	YBADJ	SFQ5F00I	58.50	53.21	46.31	38.00	28.53	18.20
SO	YBADJ	SFQ5F00I	7.32	-3.79	-14.78	-25.33	-35.10	-43.81
SO	YBADJ	SFQ5F00I	-51.18	-57.00	-61.09	-63.32	-63.63	-62.01
SO	YBADJ	SFQ5F00I	-58.50	-53.21	-46.31	-38.00	-28.53	-18.20
SO	BUILDHGT	SFQ5F00J	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00J	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00J	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00J	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00J	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00J	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F00J	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00J	172.04	176.71	176.02	169.98	158.77	142.74

SO BUILDWID	SFQ5F00J	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00J	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00J	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00J	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00J	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00J	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00J	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00J	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00J	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00J	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00J	-18.43	-13.29	-7.74	-1.95	3.89	-13.69
SO XBADJ	SFQ5F00J	-33.46	-52.21	-69.37	-84.43	-96.92	-106.46
SO XBADJ	SFQ5F00J	-112.77	-115.66	-130.00	-142.06	-149.81	-153.00
SO XBADJ	SFQ5F00J	-151.54	-145.48	-135.00	-120.42	-102.18	-104.14
SO XBADJ	SFQ5F00J	-105.54	-103.73	-98.77	-90.81	-80.09	-66.93
SO XBADJ	SFQ5F00J	-51.74	-34.98	-32.14	-29.98	-26.91	-23.02
SO YBADJ	SFQ5F00J	-3.19	8.41	19.76	30.51	40.34	48.93
SO YBADJ	SFQ5F00J	56.04	61.45	64.99	66.56	66.10	63.63
SO YBADJ	SFQ5F00J	59.23	53.04	45.23	36.04	25.76	14.70
SO YBADJ	SFQ5F00J	3.19	-8.41	-19.76	-30.51	-40.34	-48.93
SO YBADJ	SFQ5F00J	-56.04	-61.45	-64.99	-66.56	-66.10	-63.63
SO YBADJ	SFQ5F00J	-59.23	-53.04	-45.23	-36.04	-25.76	-14.70
SO BUILDHGT	SFQ5F00K	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00K	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00K	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00K	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00K	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00K	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F00K	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00K	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00K	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00K	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00K	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00K	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00K	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00K	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00K	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00K	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00K	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00K	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00K	-15.25	-10.92	-6.26	-1.41	3.49	-15.03
SO XBADJ	SFQ5F00K	-35.69	-55.27	-73.17	-88.84	-101.82	-111.70
SO XBADJ	SFQ5F00K	-118.19	-121.09	-135.28	-147.03	-154.31	-156.90
SO XBADJ	SFQ5F00K	-154.72	-147.85	-136.48	-120.96	-101.77	-102.80
SO XBADJ	SFQ5F00K	-103.30	-100.67	-94.97	-86.39	-75.18	-61.69
SO XBADJ	SFQ5F00K	-46.33	-29.55	-26.86	-25.01	-22.41	-19.12
SO YBADJ	SFQ5F00K	1.23	13.32	25.01	35.93	45.77	54.21
SO YBADJ	SFQ5F00K	61.01	65.95	68.89	69.74	68.46	65.11
SO YBADJ	SFQ5F00K	59.78	52.63	43.88	33.80	22.70	10.90
SO YBADJ	SFQ5F00K	-1.23	-13.32	-25.01	-35.93	-45.77	-54.21
SO YBADJ	SFQ5F00K	-61.01	-65.95	-68.89	-69.74	-68.46	-65.11
SO YBADJ	SFQ5F00K	-59.78	-52.63	-43.88	-33.80	-22.70	-10.90
SO BUILDHGT	SFQ5F00L	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00L	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00L	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00L	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00L	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00L	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F00L	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00L	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00L	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00L	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00L	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00L	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00L	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00L	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00L	164.52	150.64	162.14	172.04	176.71	176.02

SO BUILDLEN	SFQ5F00L	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00L	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00L	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00L	-12.29	-8.59	-4.63	-0.52	3.60	-15.71
SO XBADJ	SFQ5F00L	-37.13	-57.42	-75.97	-92.21	-105.65	-115.88
SO XBADJ	SFQ5F00L	-122.58	-125.57	-139.71	-151.27	-158.24	-160.40
SO XBADJ	SFQ5F00L	-157.69	-150.18	-138.11	-121.85	-101.88	-102.13
SO XBADJ	SFQ5F00L	-101.87	-98.52	-92.17	-83.02	-71.35	-57.52
SO XBADJ	SFQ5F00L	-41.93	-25.07	-22.43	-20.77	-18.47	-15.62
SO YBADJ	SFQ5F00L	4.59	17.15	29.18	40.33	50.25	58.64
SO YBADJ	SFQ5F00L	65.25	69.88	72.39	72.70	70.79	66.74
SO YBADJ	SFQ5F00L	60.66	52.74	43.21	32.37	20.55	8.10
SO YBADJ	SFQ5F00L	-4.59	-17.15	-29.18	-40.33	-50.25	-58.64
SO YBADJ	SFQ5F00L	-65.25	-69.88	-72.39	-72.70	-70.79	-66.74
SO YBADJ	SFQ5F00L	-60.66	-52.74	-43.21	-32.37	-20.55	-8.10
SO BUILDHGT	SFQ5F00M	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00M	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00M	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00M	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00M	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00M	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F00M	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00M	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00M	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00M	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00M	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00M	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00M	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00M	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00M	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00M	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00M	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00M	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00M	-8.80	-5.61	-2.25	1.18	4.57	-15.49
SO XBADJ	SFQ5F00M	-37.67	-58.71	-77.97	-94.86	-108.86	-119.56
SO XBADJ	SFQ5F00M	-126.62	-129.84	-144.09	-155.62	-162.43	-164.30
SO XBADJ	SFQ5F00M	-161.18	-153.16	-140.49	-123.55	-102.85	-102.34
SO XBADJ	SFQ5F00M	-101.32	-97.22	-90.17	-80.38	-68.14	-53.83
SO XBADJ	SFQ5F00M	-37.89	-20.80	-18.05	-16.42	-14.29	-11.72
SO YBADJ	SFQ5F00M	7.24	20.36	32.86	44.37	54.52	63.02
SO YBADJ	SFQ5F00M	69.60	74.07	76.29	76.19	73.78	69.12
SO YBADJ	SFQ5F00M	62.36	53.71	43.43	31.82	19.25	6.10
SO YBADJ	SFQ5F00M	-7.24	-20.36	-32.86	-44.37	-54.52	-63.02
SO YBADJ	SFQ5F00M	-69.60	-74.07	-76.29	-76.19	-73.78	-69.12
SO YBADJ	SFQ5F00M	-62.36	-53.71	-43.43	-31.82	-19.25	-6.10
SO BUILDHGT	SFQ5F00N	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00N	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00N	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00N	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00N	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00N	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F00N	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00N	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00N	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00N	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00N	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00N	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00N	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00N	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00N	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00N	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00N	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00N	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00N	-6.36	-3.82	-1.15	1.55	4.20	-16.59
SO XBADJ	SFQ5F00N	-39.47	-61.15	-80.97	-98.33	-112.71	-123.66
SO XBADJ	SFQ5F00N	-130.85	-134.07	-148.19	-159.47	-165.90	-167.30
SO XBADJ	SFQ5F00N	-163.61	-154.95	-141.59	-123.92	-102.48	-101.25

SO	XBADJ	SFQ5F00N	-99.53	-94.79	-87.17	-76.90	-64.30	-49.74
SO	XBADJ	SFQ5F00N	-33.67	-16.57	-13.95	-12.57	-10.81	-8.72
SO	YBADJ	SFQ5F00N	10.72	24.21	36.96	48.59	58.75	67.12
SO	YBADJ	SFQ5F00N	73.45	77.55	79.29	78.62	75.57	70.22
SO	YBADJ	SFQ5F00N	62.73	53.34	42.33	30.03	16.82	3.10
SO	YBADJ	SFQ5F00N	-10.72	-24.21	-36.96	-48.59	-58.75	-67.12
SO	YBADJ	SFQ5F00N	-73.45	-77.55	-79.29	-78.62	-75.57	-70.22
SO	YBADJ	SFQ5F00N	-62.73	-53.34	-42.33	-30.03	-16.82	-3.10
SO	BUILDHGT	SFQ5F00O	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00O	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00O	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00O	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00O	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00O	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F00O	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00O	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00O	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F00O	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00O	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00O	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F00O	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00O	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00O	164.52	150.64	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F00O	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00O	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00O	164.52	150.64	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F00O	-0.05	0.92	1.87	2.75	3.56	-19.06
SO	XBADJ	SFQ5F00O	-43.69	-67.00	-88.27	-106.86	-122.20	-133.83
SO	XBADJ	SFQ5F00O	-141.39	-144.66	-158.50	-169.20	-174.76	-175.00
SO	XBADJ	SFQ5F00O	-169.93	-159.69	-144.60	-125.12	-101.84	-98.77
SO	XBADJ	SFQ5F00O	-95.30	-88.94	-79.87	-68.37	-54.80	-39.56
SO	XBADJ	SFQ5F00O	-23.12	-5.98	-3.63	-2.84	-1.96	-1.02
SO	YBADJ	SFQ5F00O	19.24	33.70	47.13	59.13	69.34	77.44
SO	YBADJ	SFQ5F00O	83.18	86.40	86.99	84.94	80.31	73.24
SO	YBADJ	SFQ5F00O	63.94	52.70	39.86	25.81	10.97	-4.20
SO	YBADJ	SFQ5F00O	-19.24	-33.70	-47.13	-59.13	-69.34	-77.44
SO	YBADJ	SFQ5F00O	-83.18	-86.40	-86.99	-84.94	-80.31	-73.24
SO	YBADJ	SFQ5F00O	-63.94	-52.70	-39.86	-25.81	-10.97	4.20
SO	BUILDHGT	SFQ5F00P	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00P	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00P	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00P	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00P	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00P	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F00P	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00P	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00P	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F00P	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00P	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00P	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F00P	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00P	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00P	164.52	150.64	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F00P	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00P	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00P	164.52	150.64	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F00P	-50.13	-38.42	-25.54	-11.88	2.13	-7.23
SO	XBADJ	SFQ5F00P	-18.96	-30.12	-40.37	-49.39	-56.91	-62.70
SO	XBADJ	SFQ5F00P	-66.58	-68.44	-83.20	-97.09	-108.04	-115.70
SO	XBADJ	SFQ5F00P	-119.85	-120.35	-117.20	-110.49	-100.42	-110.61
SO	XBADJ	SFQ5F00P	-120.03	-125.81	-127.77	-125.84	-120.10	-110.70
SO	XBADJ	SFQ5F00P	-97.94	-82.20	-78.94	-74.95	-68.68	-60.32
SO	YBADJ	SFQ5F00P	-38.23	-31.59	-24.00	-15.68	-6.88	2.13
SO	YBADJ	SFQ5F00P	11.07	19.68	27.69	34.86	40.97	45.83
SO	YBADJ	SFQ5F00P	49.30	51.27	51.69	50.54	47.84	43.70
SO	YBADJ	SFQ5F00P	38.23	31.59	24.00	15.68	6.88	-2.13
SO	YBADJ	SFQ5F00P	-11.07	-19.68	-27.69	-34.86	-40.97	-45.83

SO	YBADJ	SFQ5F00P	-49.30	-51.27	-51.69	-50.54	-47.84	-43.70
SO	BUILDHGT	SFQ5F00Q	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00Q	10.00	10.00	10.00	10.00	10.00	0.00
SO	BUILDHGT	SFQ5F00Q	0.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00Q	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00Q	10.00	10.00	10.00	10.00	10.00	0.00
SO	BUILDHGT	SFQ5F00Q	0.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F00Q	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00Q	172.04	176.71	176.02	169.98	158.77	0.00
SO	BUILDWID	SFQ5F00Q	0.00	0.00	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F00Q	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00Q	172.04	176.71	176.02	169.98	158.77	0.00
SO	BUILDWID	SFQ5F00Q	0.00	0.00	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F00Q	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00Q	139.00	155.94	168.14	175.23	177.00	0.00
SO	BUILDLEN	SFQ5F00Q	0.00	0.00	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F00Q	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00Q	139.00	155.94	168.14	175.23	177.00	0.00
SO	BUILDLEN	SFQ5F00Q	0.00	0.00	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F00Q	2.51	3.96	5.30	6.47	7.45	-15.11
SO	XBADJ	SFQ5F00Q	-39.81	-63.30	-84.87	-103.86	-119.69	0.00
SO	XBADJ	SFQ5F00Q	0.00	0.00	-158.54	-169.92	-176.13	-177.00
SO	XBADJ	SFQ5F00Q	-172.49	-162.73	-148.04	-128.84	-105.73	-102.72
SO	XBADJ	SFQ5F00Q	-99.18	-92.63	-83.27	-71.38	-57.31	0.00
SO	XBADJ	SFQ5F00Q	0.00	0.00	-3.60	-2.12	-0.58	0.98
SO	YBADJ	SFQ5F00Q	16.24	31.19	45.19	57.81	68.68	77.47
SO	YBADJ	SFQ5F00Q	83.90	87.78	88.99	87.50	83.35	0.00
SO	YBADJ	SFQ5F00Q	0.00	0.00	43.80	29.68	14.67	-0.80
SO	YBADJ	SFQ5F00Q	-16.24	-31.19	-45.19	-57.81	-68.68	-77.47
SO	YBADJ	SFQ5F00Q	-83.90	-87.78	-88.99	-87.50	-83.35	0.00
SO	YBADJ	SFQ5F00Q	0.00	0.00	-43.80	-29.68	-14.67	0.80
SO	BUILDHGT	SFQ5F00R	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00R	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00R	0.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00R	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00R	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00R	0.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F00R	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00R	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00R	0.00	0.00	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F00R	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00R	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00R	0.00	0.00	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F00R	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00R	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00R	0.00	0.00	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F00R	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00R	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00R	0.00	0.00	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F00R	-0.61	1.81	4.18	6.43	8.48	-13.04
SO	XBADJ	SFQ5F00R	-36.77	-59.37	-80.17	-98.53	-113.90	-125.81
SO	XBADJ	SFQ5F00R	0.00	0.00	-152.72	-164.55	-171.38	-173.00
SO	XBADJ	SFQ5F00R	-169.36	-160.58	-146.92	-128.80	-106.76	-104.79
SO	XBADJ	SFQ5F00R	-102.23	-96.57	-87.97	-76.70	-63.10	-47.58
SO	XBADJ	SFQ5F00R	0.00	0.00	-9.42	-7.49	-5.34	-3.02
SO	YBADJ	SFQ5F00R	10.92	25.40	39.12	51.64	62.60	71.65
SO	YBADJ	SFQ5F00R	78.53	83.02	84.99	84.38	81.20	75.55
SO	YBADJ	SFQ5F00R	0.00	0.00	45.87	32.73	18.60	3.90
SO	YBADJ	SFQ5F00R	-10.92	-25.40	-39.12	-51.64	-62.60	-71.65
SO	YBADJ	SFQ5F00R	-78.53	-83.02	-84.99	-84.38	-81.20	-75.55
SO	YBADJ	SFQ5F00R	0.00	0.00	-45.87	-32.73	-18.60	-3.90
SO	BUILDHGT	SFQ5F00S	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00S	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00S	10.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00S	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00S	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00S	10.00	0.00	10.00	10.00	10.00	10.00

SO BUILDWID	SFQ5F00S	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00S	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00S	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00S	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00S	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00S	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00S	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00S	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00S	164.52	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00S	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00S	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00S	164.52	0.00	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00S	-8.27	-4.47	-0.54	3.42	7.26	-12.42
SO XBADJ	SFQ5F00S	-34.33	-55.19	-74.37	-91.29	-105.44	-116.39
SO XBADJ	SFQ5F00S	-123.80	0.00	-142.20	-154.30	-161.71	-164.20
SO XBADJ	SFQ5F00S	-161.71	-154.30	-142.20	-125.78	-105.55	-105.41
SO XBADJ	SFQ5F00S	-104.67	-100.75	-93.77	-83.94	-71.56	-57.00
SO XBADJ	SFQ5F00S	-40.71	0.00	-19.94	-17.74	-15.01	-11.82
SO YBADJ	SFQ5F00S	3.68	16.94	29.69	41.54	52.13	61.13
SO YBADJ	SFQ5F00S	68.28	73.35	76.19	76.72	74.91	70.83
SO YBADJ	SFQ5F00S	64.60	0.00	46.50	35.17	22.78	9.70
SO YBADJ	SFQ5F00S	-3.68	-16.94	-29.69	-41.54	-52.13	-61.13
SO YBADJ	SFQ5F00S	-68.28	-73.35	-76.19	-76.72	-74.91	-70.83
SO YBADJ	SFQ5F00S	-64.60	0.00	-46.50	-35.17	-22.78	-9.70
SO BUILDHGT	SFQ5F00T	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00T	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00T	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00T	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00T	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00T	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F00T	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00T	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00T	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00T	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00T	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00T	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00T	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00T	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00T	164.52	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00T	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00T	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00T	164.52	0.00	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00T	-12.84	-8.08	-3.06	2.04	7.09	-11.40
SO XBADJ	SFQ5F00T	-32.13	-51.89	-70.07	-86.12	-99.56	-109.97
SO XBADJ	SFQ5F00T	-117.04	0.00	-135.37	-147.75	-155.64	-158.80
SO XBADJ	SFQ5F00T	-157.13	-150.69	-139.67	-124.41	-105.37	-106.44
SO XBADJ	SFQ5F00T	-106.87	-104.05	-98.07	-89.11	-77.45	-63.43
SO XBADJ	SFQ5F00T	-47.48	0.00	-26.76	-24.29	-21.07	-17.22
SO YBADJ	SFQ5F00T	-1.49	11.06	23.27	34.78	45.23	54.31
SO YBADJ	SFQ5F00T	61.73	67.28	70.79	72.15	71.31	68.31
SO YBADJ	SFQ5F00T	63.23	0.00	47.52	37.37	26.08	14.00
SO YBADJ	SFQ5F00T	1.49	-11.06	-23.27	-34.78	-45.23	-54.31
SO YBADJ	SFQ5F00T	-61.73	-67.28	-70.79	-72.15	-71.31	-68.31
SO YBADJ	SFQ5F00T	-63.23	0.00	-47.52	-37.37	-26.08	-14.00
SO BUILDHGT	SFQ5F00U	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00U	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00U	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00U	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00U	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00U	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F00U	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00U	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00U	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00U	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00U	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00U	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00U	169.98	158.77	142.74	122.37	98.28	117.83

SO BUILDLEN	SFQ5F00U	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00U	164.52	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00U	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00U	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00U	164.52	0.00	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00U	-18.09	-12.41	-6.36	-0.11	6.14	-11.11
SO XBADJ	SFQ5F00U	-30.61	-49.19	-66.27	-81.34	-93.93	-103.68
SO XBADJ	SFQ5F00U	-110.27	0.00	-128.28	-140.81	-149.07	-152.80
SO XBADJ	SFQ5F00U	-151.89	-146.36	-136.38	-122.26	-104.42	-106.73
SO XBADJ	SFQ5F00U	-108.38	-106.75	-101.87	-93.90	-83.07	-69.72
SO XBADJ	SFQ5F00U	-54.25	0.00	-33.86	-31.23	-27.64	-23.22
SO YBADJ	SFQ5F00U	-6.28	5.43	16.98	28.01	38.19	47.21
SO YBADJ	SFQ5F00U	54.79	60.71	64.79	66.90	66.97	65.01
SO YBADJ	SFQ5F00U	61.07	0.00	47.81	38.89	28.78	17.80
SO YBADJ	SFQ5F00U	6.28	-5.43	-16.98	-28.01	-38.19	-47.21
SO YBADJ	SFQ5F00U	-54.79	-60.71	-64.79	-66.90	-66.97	-65.01
SO YBADJ	SFQ5F00U	-61.07	0.00	-47.81	-38.89	-28.78	-17.80
SO BUILDHGT	SFQ5F00V	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00V	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00V	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00V	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00V	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00V	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F00V	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00V	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00V	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00V	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00V	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00V	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00V	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00V	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00V	164.52	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00V	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00V	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00V	164.52	0.00	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00V	-22.30	-15.60	-8.43	-1.00	6.46	-9.59
SO XBADJ	SFQ5F00V	-27.94	-45.45	-61.57	-75.82	-87.77	-97.06
SO XBADJ	SFQ5F00V	-103.39	0.00	-121.51	-134.41	-143.23	-147.70
SO XBADJ	SFQ5F00V	-147.68	-143.17	-134.31	-121.37	-104.75	-108.25
SO XBADJ	SFQ5F00V	-111.06	-110.49	-106.57	-99.41	-89.23	-76.34
SO XBADJ	SFQ5F00V	-61.13	0.00	-40.63	-37.63	-33.48	-28.32
SO YBADJ	SFQ5F00V	-11.79	-0.73	10.36	21.13	31.26	40.44
SO YBADJ	SFQ5F00V	48.39	54.88	59.69	62.69	63.79	62.94
SO YBADJ	SFQ5F00V	60.19	0.00	49.33	41.56	32.52	22.50
SO YBADJ	SFQ5F00V	11.79	0.73	-10.36	-21.13	-31.26	-40.44
SO YBADJ	SFQ5F00V	-48.39	-54.88	-59.69	-62.69	-63.79	-62.94
SO YBADJ	SFQ5F00V	-60.19	0.00	-49.33	-41.56	-32.52	-22.50
SO BUILDHGT	SFQ5F00W	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00W	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00W	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00W	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00W	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F00W	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F00W	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00W	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00W	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F00W	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F00W	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F00W	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F00W	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00W	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00W	164.52	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F00W	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F00W	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F00W	164.52	0.00	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F00W	-28.60	-20.60	-11.98	-3.00	6.07	-8.35
SO XBADJ	SFQ5F00W	-25.12	-41.12	-55.87	-68.93	-79.89	-88.42

SO	XBADJ	SFQ5F00W	-94.27	0.00	-112.25	-125.51	-134.96	-140.30
SO	XBADJ	SFQ5F00W	-141.38	-138.17	-130.75	-119.37	-104.35	-109.48
SO	XBADJ	SFQ5F00W	-113.88	-114.82	-112.27	-106.31	-97.12	-84.97
SO	XBADJ	SFQ5F00W	-70.25	0.00	-49.88	-46.53	-41.76	-35.72
SO	YBADJ	SFQ5F00W	-18.69	-8.62	1.72	12.01	21.93	31.18
SO	YBADJ	SFQ5F00W	39.49	46.60	52.29	56.39	58.78	59.38
SO	YBADJ	SFQ5F00W	58.18	0.00	50.57	44.38	36.85	28.20
SO	YBADJ	SFQ5F00W	18.69	8.62	-1.72	-12.01	-21.93	-31.18
SO	YBADJ	SFQ5F00W	-39.49	-46.60	-52.29	-56.39	-58.78	-59.38
SO	YBADJ	SFQ5F00W	-58.18	0.00	-50.57	-44.38	-36.85	-28.20
SO	BUILDHGT	SFQ5F00X	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00X	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00X	10.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00X	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00X	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00X	10.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F00X	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00X	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00X	122.37	0.00	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F00X	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00X	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00X	122.37	0.00	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F00X	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00X	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00X	164.52	0.00	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F00X	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00X	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00X	164.52	0.00	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F00X	-32.39	-23.57	-14.03	-4.07	6.01	-7.40
SO	XBADJ	SFQ5F00X	-23.18	-38.25	-52.17	-64.50	-74.87	-82.97
SO	XBADJ	SFQ5F00X	-88.54	0.00	-106.51	-120.02	-129.88	-135.80
SO	XBADJ	SFQ5F00X	-137.59	-135.20	-128.71	-118.30	-104.30	-110.44
SO	XBADJ	SFQ5F00X	-115.82	-117.68	-115.97	-110.73	-102.13	-90.43
SO	XBADJ	SFQ5F00X	-75.98	0.00	-55.63	-52.02	-46.83	-40.22
SO	YBADJ	SFQ5F00X	-23.12	-13.63	-3.73	6.28	16.10	25.44
SO	YBADJ	SFQ5F00X	34.00	41.52	47.79	52.60	55.82	57.34
SO	YBADJ	SFQ5F00X	57.11	0.00	51.52	46.32	39.71	31.90
SO	YBADJ	SFQ5F00X	23.12	13.63	3.73	-6.28	-16.10	-25.44
SO	YBADJ	SFQ5F00X	-34.00	-41.52	-47.79	-52.60	-55.82	-57.34
SO	YBADJ	SFQ5F00X	-57.11	0.00	-51.52	-46.32	-39.71	-31.90
SO	BUILDHGT	SFQ5F00Y	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00Y	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00Y	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00Y	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00Y	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00Y	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F00Y	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00Y	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00Y	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F00Y	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00Y	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00Y	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F00Y	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00Y	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00Y	164.52	150.64	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F00Y	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00Y	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00Y	164.52	150.64	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F00Y	-39.10	-29.09	-18.20	-6.75	4.90	-6.92
SO	XBADJ	SFQ5F00Y	-21.11	-34.67	-47.17	-58.24	-67.54	-74.79
SO	XBADJ	SFQ5F00Y	-79.76	-82.31	-97.34	-111.07	-121.43	-128.10
SO	XBADJ	SFQ5F00Y	-130.88	-129.68	-124.54	-115.61	-103.18	-110.92
SO	XBADJ	SFQ5F00Y	-117.88	-121.27	-120.97	-116.99	-109.46	-98.61
SO	XBADJ	SFQ5F00Y	-84.76	-68.33	-64.80	-60.97	-55.28	-47.92
SO	YBADJ	SFQ5F00Y	-29.38	-20.96	-11.91	-2.50	6.99	16.27
SO	YBADJ	SFQ5F00Y	25.05	33.07	40.09	45.89	50.29	53.17
SO	YBADJ	SFQ5F00Y	54.43	54.04	52.00	48.39	43.30	36.90

SO	YBADJ	SFQ5F00Y	29.38	20.96	11.91	2.50	-6.99	-16.27
SO	YBADJ	SFQ5F00Y	-25.05	-33.07	-40.09	-45.89	-50.29	-53.17
SO	YBADJ	SFQ5F00Y	-54.43	-54.04	-52.00	-48.39	-43.30	-36.90
SO	BUILDHGT	SFQ5F00Z	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00Z	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00Z	10.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00Z	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00Z	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F00Z	10.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F00Z	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00Z	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00Z	122.37	0.00	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F00Z	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F00Z	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F00Z	122.37	0.00	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F00Z	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00Z	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00Z	164.52	0.00	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F00Z	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F00Z	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F00Z	164.52	0.00	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F00Z	-42.87	-31.72	-19.61	-6.90	6.02	-4.55
SO	XBADJ	SFQ5F00Z	-17.59	-30.08	-41.67	-51.99	-60.73	-67.62
SO	XBADJ	SFQ5F00Z	-72.46	0.00	-90.43	-104.68	-115.75	-123.30
SO	XBADJ	SFQ5F00Z	-127.11	-127.05	-123.13	-115.47	-104.31	-113.28
SO	XBADJ	SFQ5F00Z	-121.41	-125.85	-126.47	-123.24	-116.27	-105.77
SO	XBADJ	SFQ5F00Z	-92.05	0.00	-71.71	-67.36	-60.97	-52.72
SO	YBADJ	SFQ5F00Z	-35.63	-27.77	-19.07	-9.80	-0.22	9.36
SO	YBADJ	SFQ5F00Z	18.66	27.39	35.29	42.12	47.66	51.76
SO	YBADJ	SFQ5F00Z	54.29	0.00	54.36	51.91	47.88	42.40
SO	YBADJ	SFQ5F00Z	35.63	27.77	19.07	9.80	0.22	-9.36
SO	YBADJ	SFQ5F00Z	-18.66	-27.39	-35.29	-42.12	-47.66	-51.76
SO	YBADJ	SFQ5F00Z	-54.29	0.00	-54.36	-51.91	-47.88	-42.40
SO	BUILDHGT	SFQ5F010	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F010	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F010	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F010	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F010	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F010	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F010	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F010	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F010	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F010	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F010	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F010	122.37	98.28	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F010	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F010	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F010	164.52	150.64	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F010	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F010	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F010	164.52	150.64	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F010	-50.55	-38.15	-24.59	-10.28	4.34	-4.49
SO	XBADJ	SFQ5F010	-15.77	-26.57	-36.57	-45.46	-52.96	-58.86
SO	XBADJ	SFQ5F010	-62.96	-65.16	-80.35	-94.76	-106.30	-114.60
SO	XBADJ	SFQ5F010	-119.42	-120.62	-118.15	-112.09	-102.62	-113.35
SO	XBADJ	SFQ5F010	-123.23	-129.36	-131.57	-129.78	-124.04	-114.54
SO	XBADJ	SFQ5F010	-101.55	-85.48	-81.79	-77.28	-70.42	-61.42
SO	YBADJ	SFQ5F010	-42.16	-35.54	-27.84	-19.30	-10.16	-0.72
SO	YBADJ	SFQ5F010	8.74	17.94	26.59	34.43	41.23	46.78
SO	YBADJ	SFQ5F010	50.90	53.48	54.43	53.73	51.40	47.50
SO	YBADJ	SFQ5F010	42.16	35.54	27.84	19.30	10.16	0.72
SO	YBADJ	SFQ5F010	-8.74	-17.94	-26.59	-34.43	-41.23	-46.78
SO	YBADJ	SFQ5F010	-50.90	-53.48	-54.43	-53.73	-51.40	-47.50
SO	BUILDHGT	SFQ5F011	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F011	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F011	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F011	10.00	10.00	10.00	10.00	10.00	10.00

SO BUILDHGT	SFQ5F011	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F011	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F011	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F011	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F011	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F011	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F011	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F011	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F011	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F011	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F011	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F011	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F011	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F011	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F011	-57.59	-43.81	-28.69	-12.71	3.66	-3.39
SO XBADJ	SFQ5F011	-12.94	-22.09	-30.57	-38.12	-44.52	-49.56
SO XBADJ	SFQ5F011	-53.10	-55.02	-70.25	-85.00	-97.18	-106.40
SO XBADJ	SFQ5F011	-112.39	-114.96	-114.05	-109.66	-101.95	-114.44
SO XBADJ	SFQ5F011	-126.06	-133.85	-137.57	-137.11	-132.49	-123.83
SO XBADJ	SFQ5F011	-111.42	-95.62	-91.89	-87.04	-79.54	-69.62
SO YBADJ	SFQ5F011	-49.49	-43.98	-37.14	-29.16	-20.30	-10.82
SO YBADJ	SFQ5F011	-1.02	8.82	18.39	27.40	35.58	42.68
SO YBADJ	SFQ5F011	48.48	52.80	55.53	56.56	55.88	53.50
SO YBADJ	SFQ5F011	49.49	43.98	37.14	29.16	20.30	10.82
SO YBADJ	SFQ5F011	1.02	-8.82	-18.39	-27.40	-35.58	-42.68
SO YBADJ	SFQ5F011	-48.48	-52.80	-55.53	-56.56	-55.88	-53.50
SO BUILDHGT	SFQ5F012	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F012	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F012	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F012	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F012	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F012	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F012	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F012	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F012	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F012	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F012	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F012	122.37	98.28	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F012	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F012	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F012	164.52	150.64	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F012	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F012	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F012	164.52	150.64	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F012	-63.20	-48.26	-31.86	-14.49	3.33	-2.27
SO XBADJ	SFQ5F012	-10.40	-18.21	-25.47	-31.95	-37.47	-41.84
SO XBADJ	SFQ5F012	-44.95	-46.68	-61.98	-77.06	-89.79	-99.80
SO XBADJ	SFQ5F012	-106.78	-110.51	-110.88	-107.88	-101.61	-115.56
SO XBADJ	SFQ5F012	-128.60	-137.73	-142.67	-143.28	-139.53	-131.55
SO XBADJ	SFQ5F012	-119.57	-103.96	-100.16	-94.98	-86.92	-76.22
SO YBADJ	SFQ5F012	-55.66	-51.03	-44.85	-37.31	-28.64	-19.09
SO YBADJ	SFQ5F012	-8.96	1.44	11.79	21.79	31.12	39.51
SO YBADJ	SFQ5F012	46.70	52.47	56.64	59.10	59.76	58.60
SO YBADJ	SFQ5F012	55.66	51.03	44.85	37.31	28.64	19.09
SO YBADJ	SFQ5F012	8.96	-1.44	-11.79	-21.79	-31.12	-39.51
SO YBADJ	SFQ5F012	-46.70	-52.47	-56.64	-59.10	-59.76	-58.60
SO BUILDHGT	SFQ5F013	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F013	10.00	10.00	10.00	0.00	0.00	0.00
SO BUILDHGT	SFQ5F013	0.00	0.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F013	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F013	10.00	10.00	10.00	0.00	0.00	0.00
SO BUILDHGT	SFQ5F013	0.00	0.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F013	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F013	172.04	176.71	176.02	0.00	0.00	0.00
SO BUILDWID	SFQ5F013	0.00	0.00	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F013	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F013	172.04	176.71	176.02	0.00	0.00	0.00

SO BUILDWID	SFQ5F013	0.00	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F013	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F013	139.00	155.94	168.14	0.00	0.00	0.00
SO BUILDLEN	SFQ5F013	0.00	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F013	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F013	139.00	155.94	168.14	0.00	0.00	0.00
SO BUILDLEN	SFQ5F013	0.00	0.00	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F013	5.38	7.21	8.83	10.17	11.21	-11.40
SO XBADJ	SFQ5F013	-36.27	-60.03	-81.97	0.00	0.00	0.00
SO XBADJ	SFQ5F013	0.00	0.00	-159.16	-171.18	-177.99	-179.40
SO XBADJ	SFQ5F013	-175.35	-165.98	-151.56	-132.54	-109.49	-106.43
SO XBADJ	SFQ5F013	-102.73	-95.91	-86.17	0.00	0.00	0.00
SO XBADJ	SFQ5F013	0.00	0.00	-2.97	-0.86	1.28	3.38
SO YBADJ	SFQ5F013	13.80	29.28	43.88	57.14	68.66	78.10
SO YBADJ	SFQ5F013	85.16	89.64	91.39	0.00	0.00	0.00
SO YBADJ	SFQ5F013	0.00	0.00	47.51	33.23	17.94	2.10
SO YBADJ	SFQ5F013	-13.80	-29.28	-43.88	-57.14	-68.66	-78.10
SO YBADJ	SFQ5F013	-85.16	-89.64	-91.39	0.00	0.00	0.00
SO YBADJ	SFQ5F013	0.00	0.00	-47.51	-33.23	-17.94	-2.10
SO BUILDHGT	SFQ5F014	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F014	10.00	10.00	10.00	10.00	10.00	0.00
SO BUILDHGT	SFQ5F014	0.00	0.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F014	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F014	10.00	10.00	10.00	10.00	10.00	0.00
SO BUILDHGT	SFQ5F014	0.00	0.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F014	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F014	172.04	176.71	176.02	169.98	158.77	0.00
SO BUILDWID	SFQ5F014	0.00	0.00	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F014	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F014	172.04	176.71	176.02	169.98	158.77	0.00
SO BUILDWID	SFQ5F014	0.00	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F014	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F014	139.00	155.94	168.14	175.23	177.00	0.00
SO BUILDLEN	SFQ5F014	0.00	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F014	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F014	139.00	155.94	168.14	175.23	177.00	0.00
SO BUILDLEN	SFQ5F014	0.00	0.00	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F014	-1.55	1.76	5.03	8.13	11.00	-9.79
SO XBADJ	SFQ5F014	-32.87	-54.96	-75.37	-93.49	-108.78	0.00
SO XBADJ	SFQ5F014	0.00	0.00	-148.76	-161.22	-168.77	-171.20
SO XBADJ	SFQ5F014	-168.43	-160.53	-147.76	-130.50	-109.28	-108.05
SO XBADJ	SFQ5F014	-106.13	-100.98	-92.77	-81.74	-68.22	0.00
SO XBADJ	SFQ5F014	0.00	0.00	-13.37	-10.82	-7.94	-4.82
SO YBADJ	SFQ5F014	5.88	20.28	34.06	46.81	58.13	67.69
SO YBADJ	SFQ5F014	75.20	80.42	83.19	83.44	81.15	0.00
SO YBADJ	SFQ5F014	0.00	0.00	49.13	36.63	23.01	8.70
SO YBADJ	SFQ5F014	-5.88	-20.28	-34.06	-46.81	-58.14	-67.69
SO YBADJ	SFQ5F014	-75.20	-80.42	-83.19	-83.44	-81.15	0.00
SO YBADJ	SFQ5F014	0.00	0.00	-49.13	-36.63	-23.01	-8.70
SO BUILDHGT	SFQ5F015	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F015	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F015	0.00	0.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F015	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F015	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F015	0.00	0.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F015	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F015	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F015	0.00	0.00	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F015	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F015	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F015	0.00	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F015	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F015	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F015	0.00	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F015	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F015	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F015	0.00	0.00	162.14	172.04	176.71	176.02

SO XBADJ	SFQ5F015	-5.85	-1.70	2.50	6.62	10.54	-9.17
SO XBADJ	SFQ5F015	-31.20	-52.28	-71.77	-89.08	-103.69	-115.14
SO XBADJ	SFQ5F015	0.00	0.00	-142.63	-155.29	-163.22	-166.20
SO XBADJ	SFQ5F015	-164.13	-157.07	-145.23	-128.99	-108.82	-108.66
SO XBADJ	SFQ5F015	-107.80	-103.66	-96.37	-86.15	-73.32	-58.25
SO XBADJ	SFQ5F015	0.00	0.00	-19.50	-16.75	-13.49	-9.82
SO YBADJ	SFQ5F015	1.46	15.18	28.44	40.84	51.99	61.56
SO YBADJ	SFQ5F015	69.27	74.87	78.19	79.14	77.68	73.86
SO YBADJ	SFQ5F015	0.00	0.00	49.75	38.30	25.69	12.30
SO YBADJ	SFQ5F015	-1.46	-15.18	-28.44	-40.84	-51.99	-61.56
SO YBADJ	SFQ5F015	-69.27	-74.87	-78.19	-79.14	-77.68	-73.86
SO YBADJ	SFQ5F015	0.00	0.00	-49.75	-38.30	-25.69	-12.30
SO BUILDHGT	SFQ5F016	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F016	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F016	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F016	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F016	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F016	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F016	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F016	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F016	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F016	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F016	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F016	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F016	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F016	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F016	164.52	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F016	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F016	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F016	164.52	0.00	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F016	-11.21	-6.06	-0.72	4.63	9.85	-8.55
SO XBADJ	SFQ5F016	-29.28	-49.12	-67.47	-83.77	-97.52	-108.32
SO XBADJ	SFQ5F016	-115.82	0.00	-135.11	-147.99	-156.37	-160.00
SO XBADJ	SFQ5F016	-158.77	-152.71	-142.01	-127.00	-108.13	-109.29
SO XBADJ	SFQ5F016	-109.72	-106.82	-100.67	-91.46	-79.48	-65.08
SO XBADJ	SFQ5F016	-48.70	0.00	-27.02	-24.05	-20.34	-16.02
SO YBADJ	SFQ5F016	-3.85	9.02	21.62	33.56	44.48	54.05
SO YBADJ	SFQ5F016	61.97	68.01	71.99	73.78	73.33	70.65
SO YBADJ	SFQ5F016	65.82	0.00	50.37	40.22	28.85	16.60
SO YBADJ	SFQ5F016	3.85	-9.02	-21.62	-33.56	-44.48	-54.05
SO YBADJ	SFQ5F016	-61.97	-68.01	-71.99	-73.78	-73.33	-70.65
SO YBADJ	SFQ5F016	-65.82	0.00	-50.37	-40.22	-28.85	-16.60
SO BUILDHGT	SFQ5F017	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F017	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F017	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F017	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F017	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F017	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F017	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F017	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F017	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F017	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F017	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F017	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F017	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F017	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F017	164.52	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F017	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F017	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F017	164.52	0.00	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F017	-15.95	-9.89	-3.54	2.93	9.30	-7.92
SO XBADJ	SFQ5F017	-27.49	-46.23	-63.57	-78.97	-91.98	-102.19
SO XBADJ	SFQ5F017	-109.29	0.00	-128.40	-141.49	-150.28	-154.50
SO XBADJ	SFQ5F017	-154.03	-148.88	-139.20	-125.30	-107.58	-109.92
SO XBADJ	SFQ5F017	-111.50	-109.70	-104.57	-96.26	-85.02	-71.21
SO XBADJ	SFQ5F017	-55.22	0.00	-33.74	-30.55	-26.44	-21.52
SO YBADJ	SFQ5F017	-8.64	3.48	15.49	27.04	37.76	47.33

SO YBADJ	SFQ5F017	55.47	61.92	66.49	69.04	69.49	67.83
SO YBADJ	SFQ5F017	64.11	0.00	51.00	42.00	31.73	20.50
SO YBADJ	SFQ5F017	8.64	-3.48	-15.49	-27.04	-37.76	-47.33
SO YBADJ	SFQ5F017	-55.47	-61.92	-66.49	-69.04	-69.49	-67.83
SO YBADJ	SFQ5F017	-64.11	0.00	-51.00	-42.00	-31.73	-20.50
SO BUILDHGT	SFQ5F018	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F018	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F018	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F018	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F018	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F018	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F018	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F018	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F018	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F018	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F018	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F018	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F018	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F018	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F018	164.52	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F018	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F018	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F018	164.52	0.00	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F018	-20.80	-13.74	-6.27	1.39	9.01	-6.96
SO XBADJ	SFQ5F018	-25.31	-42.89	-59.17	-73.65	-85.89	-95.53
SO XBADJ	SFQ5F018	-102.26	0.00	-121.26	-134.63	-143.90	-148.80
SO XBADJ	SFQ5F018	-149.18	-145.02	-136.46	-123.76	-107.29	-110.88
SO XBADJ	SFQ5F018	-113.69	-113.05	-108.97	-101.58	-91.11	-77.87
SO XBADJ	SFQ5F018	-62.26	0.00	-40.87	-37.41	-32.81	-27.22
SO YBADJ	SFQ5F018	-13.97	-2.61	8.83	20.00	30.56	40.20
SO YBADJ	SFQ5F018	48.61	55.54	60.79	64.19	65.64	65.10
SO YBADJ	SFQ5F018	62.57	0.00	51.96	44.19	35.08	24.90
SO YBADJ	SFQ5F018	13.97	2.61	-8.83	-20.00	-30.56	-40.20
SO YBADJ	SFQ5F018	-48.61	-55.54	-60.79	-64.19	-65.64	-65.10
SO YBADJ	SFQ5F018	-62.57	0.00	-51.96	-44.19	-35.08	-24.90
SO BUILDHGT	SFQ5F019	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F019	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F019	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F019	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F019	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F019	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F019	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F019	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F019	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F019	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F019	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F019	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F019	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F019	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F019	164.52	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F019	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F019	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F019	164.52	0.00	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F019	-25.51	-17.43	-8.82	0.06	8.93	-5.77
SO XBADJ	SFQ5F019	-22.90	-39.33	-54.57	-68.15	-79.66	-88.74
SO XBADJ	SFQ5F019	-95.14	0.00	-114.11	-127.79	-137.59	-143.20
SO XBADJ	SFQ5F019	-144.46	-141.34	-133.91	-122.42	-107.21	-112.06
SO XBADJ	SFQ5F019	-116.10	-116.60	-113.57	-107.08	-97.35	-84.65
SO XBADJ	SFQ5F019	-69.38	0.00	-48.02	-44.25	-39.13	-32.82
SO YBADJ	SFQ5F019	-19.47	-8.84	2.05	12.88	23.32	33.05
SO YBADJ	SFQ5F019	41.77	49.23	55.19	59.47	61.95	62.55
SO YBADJ	SFQ5F019	61.24	0.00	53.14	46.60	38.64	29.50
SO YBADJ	SFQ5F019	19.47	8.84	-2.05	-12.88	-23.32	-33.05
SO YBADJ	SFQ5F019	-41.77	-49.23	-55.19	-59.47	-61.95	-62.55
SO YBADJ	SFQ5F019	-61.24	0.00	-53.14	-46.60	-38.64	-29.50
SO BUILDHGT	SFQ5F01A	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01A	10.00	10.00	10.00	10.00	10.00	10.00

SO	BUILDHGT	SFQ5F01A	10.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F01A	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F01A	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F01A	10.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F01A	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F01A	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F01A	122.37	0.00	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F01A	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F01A	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F01A	122.37	0.00	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F01A	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F01A	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F01A	164.52	0.00	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F01A	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F01A	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F01A	164.52	0.00	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F01A	-31.56	-22.34	-12.44	-2.16	8.19	-5.03
SO	XBADJ	SFQ5F01A	-20.69	-35.72	-49.67	-62.11	-72.66	-81.00
SO	XBADJ	SFQ5F01A	-86.88	0.00	-105.60	-119.54	-129.84	-136.20
SO	XBADJ	SFQ5F01A	-138.42	-136.43	-130.30	-120.21	-106.47	-112.80
SO	XBADJ	SFQ5F01A	-118.31	-120.21	-118.47	-113.13	-104.34	-92.39
SO	XBADJ	SFQ5F01A	-77.63	0.00	-56.54	-52.50	-46.87	-39.82
SO	YBADJ	SFQ5F01A	-25.51	-15.84	-5.70	4.62	14.80	24.53
SO	YBADJ	SFQ5F01A	33.52	41.48	48.19	53.43	57.05	58.93
SO	YBADJ	SFQ5F01A	59.03	0.00	53.89	48.81	42.25	34.40
SO	YBADJ	SFQ5F01A	25.51	15.84	5.70	-4.62	-14.80	-24.53
SO	YBADJ	SFQ5F01A	-33.52	-41.48	-48.19	-53.43	-57.05	-58.93
SO	YBADJ	SFQ5F01A	-59.03	0.00	-53.89	-48.81	-42.25	-34.40
SO	BUILDHGT	SFQ5F01B	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F01B	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F01B	10.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F01B	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F01B	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F01B	10.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F01B	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F01B	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F01B	122.37	0.00	117.83	139.00	155.94	168.14
SO	BUILDWID	SFQ5F01B	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F01B	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F01B	122.37	0.00	117.83	139.00	155.94	168.14
SO	BUILDLEN	SFQ5F01B	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F01B	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F01B	164.52	0.00	162.14	172.04	176.71	176.02
SO	BUILDLEN	SFQ5F01B	169.98	158.77	142.74	122.37	98.28	117.83
SO	BUILDLEN	SFQ5F01B	139.00	155.94	168.14	175.23	177.00	173.39
SO	BUILDLEN	SFQ5F01B	164.52	0.00	162.14	172.04	176.71	176.02
SO	XBADJ	SFQ5F01B	-37.46	-26.96	-15.65	-3.86	8.05	-3.59
SO	XBADJ	SFQ5F01B	-17.73	-31.33	-43.97	-55.28	-64.91	-72.56
SO	XBADJ	SFQ5F01B	-78.02	0.00	-96.69	-111.01	-121.96	-129.20
SO	XBADJ	SFQ5F01B	-132.52	-131.81	-127.09	-118.51	-106.34	-114.24
SO	XBADJ	SFQ5F01B	-121.27	-124.61	-124.17	-119.95	-112.10	-100.83
SO	XBADJ	SFQ5F01B	-86.50	0.00	-65.45	-61.03	-54.76	-46.82
SO	YBADJ	SFQ5F01B	-32.34	-23.59	-14.13	-4.24	5.78	15.62
SO	YBADJ	SFQ5F01B	24.99	33.60	41.19	47.53	52.42	55.72
SO	YBADJ	SFQ5F01B	57.33	0.00	55.32	51.77	46.64	40.10
SO	YBADJ	SFQ5F01B	32.34	23.59	14.13	4.24	-5.78	-15.62
SO	YBADJ	SFQ5F01B	-24.99	-33.60	-41.19	-47.53	-52.42	-55.72
SO	YBADJ	SFQ5F01B	-57.33	0.00	-55.32	-51.77	-46.64	-40.10
SO	BUILDHGT	SFQ5F01C	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F01C	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F01C	10.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F01C	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F01C	10.00	10.00	10.00	10.00	10.00	10.00
SO	BUILDHGT	SFQ5F01C	10.00	0.00	10.00	10.00	10.00	10.00
SO	BUILDWID	SFQ5F01C	175.23	177.00	173.39	164.52	150.64	162.14
SO	BUILDWID	SFQ5F01C	172.04	176.71	176.02	169.98	158.77	142.74
SO	BUILDWID	SFQ5F01C	122.37	0.00	117.83	139.00	155.94	168.14

SO BUILDWID	SFQ5F01C	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F01C	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F01C	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F01C	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F01C	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F01C	164.52	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F01C	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F01C	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F01C	164.52	0.00	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F01C	-41.84	-30.49	-18.21	-5.38	7.61	-2.94
SO XBADJ	SFQ5F01C	-16.00	-28.57	-40.27	-50.75	-59.69	-66.81
SO XBADJ	SFQ5F01C	-71.90	0.00	-90.42	-104.95	-116.29	-124.10
SO XBADJ	SFQ5F01C	-128.14	-128.28	-124.52	-116.99	-105.89	-114.89
SO XBADJ	SFQ5F01C	-123.00	-127.37	-127.87	-124.48	-117.32	-106.58
SO XBADJ	SFQ5F01C	-92.61	0.00	-71.71	-67.09	-60.42	-51.92
SO YBADJ	SFQ5F01C	-36.87	-28.82	-19.89	-10.35	-0.51	9.35
SO YBADJ	SFQ5F01C	18.93	27.94	36.09	43.15	48.89	53.15
SO YBADJ	SFQ5F01C	55.80	0.00	55.98	53.50	49.40	43.80
SO YBADJ	SFQ5F01C	36.87	28.82	19.89	10.35	0.51	-9.35
SO YBADJ	SFQ5F01C	-18.93	-27.94	-36.09	-43.15	-48.89	-53.15
SO YBADJ	SFQ5F01C	-55.80	0.00	-55.98	-53.50	-49.40	-43.80
SO BUILDHGT	SFQ5F01D	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01D	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01D	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01D	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01D	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01D	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F01D	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F01D	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F01D	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F01D	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F01D	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F01D	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F01D	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F01D	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F01D	164.52	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F01D	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F01D	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F01D	164.52	0.00	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F01D	-47.54	-35.12	-21.63	-7.48	6.89	-2.26
SO XBADJ	SFQ5F01D	-13.93	-25.18	-35.67	-45.07	-53.11	-59.53
SO XBADJ	SFQ5F01D	-64.14	0.00	-82.41	-97.18	-108.99	-117.50
SO XBADJ	SFQ5F01D	-122.44	-123.65	-121.11	-114.89	-105.17	-115.58
SO XBADJ	SFQ5F01D	-125.07	-130.75	-132.47	-130.16	-123.90	-113.87
SO XBADJ	SFQ5F01D	-100.38	0.00	-79.73	-74.86	-67.72	-58.52
SO YBADJ	SFQ5F01D	-42.54	-35.39	-27.17	-18.12	-8.52	1.34
SO YBADJ	SFQ5F01D	11.16	20.64	29.49	37.45	44.27	49.74
SO YBADJ	SFQ5F01D	53.70	0.00	56.66	55.57	52.79	48.40
SO YBADJ	SFQ5F01D	42.54	35.39	27.17	18.12	8.52	-1.34
SO YBADJ	SFQ5F01D	-11.16	-20.64	-29.49	-37.45	-44.27	-49.74
SO YBADJ	SFQ5F01D	-53.70	0.00	-56.66	-55.57	-52.79	-48.40
SO BUILDHGT	SFQ5F01E	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01E	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01E	10.00	0.00	0.00	0.00	0.00	10.00
SO BUILDHGT	SFQ5F01E	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01E	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01E	10.00	0.00	0.00	0.00	0.00	10.00
SO BUILDWID	SFQ5F01E	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F01E	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F01E	122.37	0.00	0.00	0.00	0.00	168.14
SO BUILDWID	SFQ5F01E	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F01E	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F01E	122.37	0.00	0.00	0.00	0.00	168.14
SO BUILDLEN	SFQ5F01E	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F01E	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F01E	164.52	0.00	0.00	0.00	0.00	176.02
SO BUILDLEN	SFQ5F01E	169.98	158.77	142.74	122.37	98.28	117.83

SO BUILDLEN	SFQ5F01E	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F01E	164.52	0.00	0.00	0.00	0.00	176.02
SO XBADJ	SFQ5F01E	-87.17	-65.96	-42.76	-18.25	6.81	8.35
SO XBADJ	SFQ5F01E	7.04	5.52	3.83	2.02	0.15	-1.72
SO XBADJ	SFQ5F01E	-3.54	0.00	0.00	0.00	0.00	-70.30
SO XBADJ	SFQ5F01E	-82.81	-92.81	-99.98	-104.12	-105.09	-126.19
SO XBADJ	SFQ5F01E	-146.04	-161.46	-171.97	-177.26	-177.16	-171.68
SO XBADJ	SFQ5F01E	-160.98	0.00	0.00	0.00	0.00	-105.72
SO YBADJ	SFQ5F01E	-89.64	-88.66	-84.98	-78.72	-70.07	-59.29
SO YBADJ	SFQ5F01E	-46.71	-32.70	-17.71	-2.18	13.42	28.61
SO YBADJ	SFQ5F01E	42.93	0.00	0.00	0.00	0.00	87.90
SO YBADJ	SFQ5F01E	89.64	88.66	84.98	78.72	70.07	59.29
SO YBADJ	SFQ5F01E	46.71	32.70	17.71	2.18	-13.42	-28.61
SO YBADJ	SFQ5F01E	-42.93	0.00	0.00	0.00	0.00	-87.90
SO BUILDHGT	SFQ5F01F	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01F	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01F	10.00	0.00	0.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01F	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01F	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01F	10.00	0.00	0.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F01F	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F01F	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F01F	122.37	0.00	0.00	139.00	155.94	168.14
SO BUILDWID	SFQ5F01F	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F01F	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F01F	122.37	0.00	0.00	139.00	155.94	168.14
SO BUILDLEN	SFQ5F01F	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F01F	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F01F	164.52	0.00	0.00	172.04	176.71	176.02
SO BUILDLEN	SFQ5F01F	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F01F	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F01F	164.52	0.00	0.00	172.04	176.71	176.02
SO XBADJ	SFQ5F01F	-84.77	-64.35	-41.97	-18.32	5.89	6.61
SO XBADJ	SFQ5F01F	4.53	2.32	0.03	-2.26	-4.48	-6.56
SO XBADJ	SFQ5F01F	-8.44	0.00	0.00	-43.53	-59.37	-73.40
SO XBADJ	SFQ5F01F	-85.20	-94.42	-100.77	-104.05	-104.17	-124.44
SO XBADJ	SFQ5F01F	-143.53	-158.25	-168.17	-172.98	-172.53	-166.83
SO XBADJ	SFQ5F01F	-156.07	0.00	0.00	-128.51	-117.35	-102.62
SO YBADJ	SFQ5F01F	-85.36	-84.03	-80.14	-73.82	-65.25	-54.70
SO YBADJ	SFQ5F01F	-42.49	-28.99	-14.61	0.22	15.04	29.40
SO YBADJ	SFQ5F01F	42.87	0.00	0.00	74.03	80.29	84.10
SO YBADJ	SFQ5F01F	85.36	84.03	80.14	73.82	65.25	54.70
SO YBADJ	SFQ5F01F	42.49	28.99	14.61	-0.22	-15.04	-29.40
SO YBADJ	SFQ5F01F	-42.87	0.00	0.00	-74.03	-80.29	-84.10
SO BUILDHGT	SFQ5F01G	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01G	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01G	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01G	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01G	10.00	10.00	10.00	10.00	10.00	10.00
SO BUILDHGT	SFQ5F01G	10.00	0.00	10.00	10.00	10.00	10.00
SO BUILDWID	SFQ5F01G	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F01G	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F01G	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDWID	SFQ5F01G	175.23	177.00	173.39	164.52	150.64	162.14
SO BUILDWID	SFQ5F01G	172.04	176.71	176.02	169.98	158.77	142.74
SO BUILDWID	SFQ5F01G	122.37	0.00	117.83	139.00	155.94	168.14
SO BUILDLEN	SFQ5F01G	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F01G	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F01G	164.52	0.00	162.14	172.04	176.71	176.02
SO BUILDLEN	SFQ5F01G	169.98	158.77	142.74	122.37	98.28	117.83
SO BUILDLEN	SFQ5F01G	139.00	155.94	168.14	175.23	177.00	173.39
SO BUILDLEN	SFQ5F01G	164.52	0.00	162.14	172.04	176.71	176.02
SO XBADJ	SFQ5F01G	-74.13	-55.89	-35.95	-14.91	6.57	4.55
SO XBADJ	SFQ5F01G	-0.21	-4.97	-9.57	-13.88	-17.77	-21.12
SO XBADJ	SFQ5F01G	-23.83	0.00	-41.99	-58.56	-73.34	-85.90
SO XBADJ	SFQ5F01G	-95.85	-102.88	-106.79	-107.46	-104.86	-122.38
SO XBADJ	SFQ5F01G	-138.78	-150.97	-158.57	-161.35	-159.23	-152.27

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                                                HR Attachment A
SO XBADJ     SFQ5F01G    -140.68      0.00   -120.15   -113.48   -103.37    -90.12
SO YBADJ     SFQ5F01G     -73.73    -70.73    -65.57    -58.43    -49.50    -39.08
SO YBADJ     SFQ5F01G     -27.46    -15.01     -2.11     10.86     23.50     35.42
SO YBADJ     SFQ5F01G      46.27      0.00     63.46     69.29     73.00     74.50
SO YBADJ     SFQ5F01G      73.73     70.73     65.57     58.43     49.50     39.08
SO YBADJ     SFQ5F01G      27.46     15.01      2.11    -10.86    -23.50    -35.42
SO YBADJ     SFQ5F01G     -46.27      0.00    -63.46    -69.29    -73.00    -74.50
SO SRCGROUP  ALL
SO FINISHED

RE STARTING
RE ELEVUNIT  METERS
** BOUNDARY  L8J2Y00F
RE DISCCART  468493.9  3780990.1  1.5  0
RE DISCCART  468554.5  3780910.6  1.5  0
RE DISCCART  468615.1  3780831.1  1.5  0
RE DISCCART  468675.8  3780751.5  1.5  0
RE DISCCART  468701.5  3780717.7  1.5  0
RE DISCCART  468655.1  3780683.8  1.5  0
RE DISCCART  468574.3  3780624.9  1.5  0
RE DISCCART  468493.6  3780565.9  1.5  0
RE DISCCART  468412.8  3780506.9  1.5  0
RE DISCCART  468405.1  3780501.3  1.5  0
RE DISCCART  468349.6  3780572.7  1.5  0
RE DISCCART  468288.3  3780651.7  1.5  0
RE DISCCART  468226.9  3780730.7  1.5  0
RE DISCCART  468202.4  3780762.3  1.5  0
RE DISCCART  468249.6  3780799.2  1.5  0
RE DISCCART  468328.4  3780860.8  1.5  0
RE DISCCART  468407.2  3780922.4  1.5  0
RE DISCCART  468486.0  3780984.0  1.5  0
** BOUNDARY  L8J2Y00O
RE DISCCART  468512.0  3781131.2  1.5  0
RE DISCCART  468572.7  3781051.7  1.5  0
RE DISCCART  468633.3  3780972.2  1.5  0
RE DISCCART  468693.9  3780892.7  1.5  0
RE DISCCART  468754.5  3780813.1  1.5  0
RE DISCCART  468815.2  3780733.6  1.5  0
RE DISCCART  468843.0  3780697.2  1.5  0
RE DISCCART  468799.2  3780665.2  1.5  0
RE DISCCART  468718.4  3780606.3  1.5  0
RE DISCCART  468637.7  3780547.3  1.5  0
RE DISCCART  468556.9  3780488.3  1.5  0
RE DISCCART  468476.1  3780429.4  1.5  0
RE DISCCART  468395.4  3780370.4  1.5  0
RE DISCCART  468385.6  3780363.3  1.5  0
RE DISCCART  468331.7  3780432.7  1.5  0
RE DISCCART  468270.4  3780511.7  1.5  0
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RE DISCCART  468147.7  3780669.7  1.5  0
RE DISCCART  468086.4  3780748.7  1.5  0
RE DISCCART  468062.3  3780779.7  1.5  0
RE DISCCART  468110.1  3780817.1  1.5  0
RE DISCCART  468188.9  3780878.7  1.5  0
RE DISCCART  468267.7  3780940.2  1.5  0
RE DISCCART  468346.5  3781001.8  1.5  0
RE DISCCART  468425.2  3781063.4  1.5  0
RE DISCCART  468504.0  3781125.0  1.5  0
** BOUNDARY  L8J2Y00X
RE DISCCART  468566.5  3781554.6  1.5  0
RE DISCCART  468657.5  3781435.3  1.5  0
RE DISCCART  468687.8  3781395.6  1.5  0
RE DISCCART  468687.8  3781395.6  1.5  0
RE DISCCART  468718.1  3781355.7  1.5  0
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RE DISCCART  468809.0  3781236.5  1.5  0
RE DISCCART  468839.3  3781196.7  1.5  0
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RE DISCCART	468869.7	3781156.9	1.5	0
RE DISCCART	468900.0	3781117.2	1.5	0
RE DISCCART	468930.3	3781077.4	1.5	0
RE DISCCART	468960.6	3781037.7	1.5	0
RE DISCCART	469021.2	3780958.1	1.5	0
RE DISCCART	469051.6	3780918.4	1.5	0
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RE DISCCART	469112.2	3780838.8	1.5	0
RE DISCCART	469142.5	3780799.1	1.5	0
RE DISCCART	469172.8	3780759.3	1.5	0
RE DISCCART	469203.1	3780719.6	1.5	0
RE DISCCART	469263.8	3780640.0	1.5	0
RE DISCCART	469267.2	3780635.5	1.5	0
RE DISCCART	469231.5	3780609.4	1.5	0
RE DISCCART	469069.9	3780491.4	1.5	0
RE DISCCART	469029.6	3780462.0	1.5	0
RE DISCCART	468908.4	3780373.5	1.5	0
RE DISCCART	468868.0	3780344.0	1.5	0
RE DISCCART	468787.3	3780285.1	1.5	0
RE DISCCART	468746.9	3780255.6	1.5	0
RE DISCCART	468625.7	3780167.1	1.5	0
RE DISCCART	468585.3	3780137.7	1.5	0
RE DISCCART	468545.0	3780108.2	1.5	0
RE DISCCART	468423.8	3780019.7	1.5	0
RE DISCCART	468383.4	3779990.2	1.5	0
RE DISCCART	468327.3	3779949.3	1.5	0
RE DISCCART	468308.6	3779973.3	1.5	0
RE DISCCART	468277.9	3780012.8	1.5	0
RE DISCCART	468277.9	3780012.9	1.5	0
RE DISCCART	468277.9	3780012.9	1.5	0
RE DISCCART	468247.3	3780052.3	1.5	0
RE DISCCART	468216.6	3780091.9	1.5	0
RE DISCCART	468185.9	3780131.3	1.5	0
RE DISCCART	468155.3	3780170.8	1.5	0
RE DISCCART	468155.3	3780170.8	1.5	0
RE DISCCART	468155.2	3780170.9	1.5	0
RE DISCCART	468063.3	3780289.3	1.5	0
RE DISCCART	468032.6	3780328.8	1.5	0
RE DISCCART	468001.9	3780368.2	1.5	0
RE DISCCART	467971.3	3780407.7	1.5	0
RE DISCCART	467971.2	3780407.8	1.5	0
RE DISCCART	467909.9	3780486.7	1.5	0
RE DISCCART	467909.9	3780486.7	1.5	0
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RE DISCCART	467817.9	3780605.2	1.5	0
RE DISCCART	467787.3	3780644.7	1.5	0
RE DISCCART	467787.3	3780644.7	1.5	0
RE DISCCART	467787.2	3780644.8	1.5	0
RE DISCCART	467695.3	3780763.2	1.5	0
RE DISCCART	467664.6	3780802.7	1.5	0
RE DISCCART	467641.9	3780831.9	1.5	0
RE DISCCART	467652.1	3780839.9	1.5	0
RE DISCCART	467691.6	3780870.7	1.5	0
RE DISCCART	467770.3	3780932.3	1.5	0
RE DISCCART	467770.3	3780932.3	1.5	0
RE DISCCART	467809.7	3780963.1	1.5	0
RE DISCCART	467849.1	3780993.8	1.5	0
RE DISCCART	467849.2	3780993.9	1.5	0
RE DISCCART	467888.5	3781024.6	1.5	0
RE DISCCART	467927.8	3781055.4	1.5	0
RE DISCCART	467927.9	3781055.5	1.5	0
RE DISCCART	467927.9	3781055.5	1.5	0
RE DISCCART	468085.4	3781178.7	1.5	0
RE DISCCART	468085.5	3781178.7	1.5	0

```
RE DISCCART  468164.2  3781240.2  1.5  0
RE DISCCART  468164.3  3781240.3  1.5  0
RE DISCCART  468203.6  3781270.9  1.5  0
RE DISCCART  468243.1  3781301.8  1.5  0
RE DISCCART  468243.1  3781301.8  1.5  0
RE DISCCART  468400.6  3781424.9  1.5  0
RE DISCCART  468400.7  3781425.0  1.5  0
RE DISCCART  468479.5  3781486.5  1.5  0
RE DISCCART  468518.8  3781517.3  1.5  0
RE DISCCART  468558.2  3781548.0  1.5  0
RE DISCCART  468558.2  3781548.0  1.5  0
RE DISCCART  468558.3  3781548.1  1.5  0
RE DISCCART  467770.3  3780932.3  1.5  0
RE DISCCART  467809.7  3780963.1  1.5  0
RE DISCCART  467849.1  3780993.8  1.5  0
RE DISCCART  467849.2  3780993.9  1.5  0
RE DISCCART  467888.5  3781024.6  1.5  0
RE DISCCART  467927.8  3781055.4  1.5  0
RE DISCCART  467927.9  3781055.5  1.5  0
RE DISCCART  468006.7  3781117.1  1.5  0
RE DISCCART  468085.5  3781178.7  1.5  0
RE DISCCART  468164.2  3781240.2  1.5  0
RE DISCCART  468164.3  3781240.3  1.5  0
RE DISCCART  468203.6  3781270.9  1.5  0
RE DISCCART  468243.1  3781301.8  1.5  0
RE DISCCART  468321.9  3781363.4  1.5  0
RE DISCCART  468400.7  3781425.0  1.5  0
RE DISCCART  468479.5  3781486.5  1.5  0
RE DISCCART  468518.8  3781517.3  1.5  0
RE DISCCART  468558.2  3781548.0  1.5  0
RE DISCCART  468558.3  3781548.1  1.5  0
** BOUNDARY  Q4OAY002
RE DISCCART  468257.9  3780783.2  0  0
RE DISCCART  468454.4  3780936.9  0  0
RE DISCCART  468611.9  3780737.6  0  0
RE DISCCART  468413.5  3780583.3  0  0
RE FINISHED

ME STARTING
ME SURFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.SFC"
** SURFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.SFC"
ME PROFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.PFL"
** PROFFILE  "C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.PFL"
ME SURFDATA  0 2007
ME UAIRDATA  3190 2007
ME PROFBASE  5  METERS
ME STARTEND  2010  1  1  1  2011  12  31  24
ME FINISHED

OU STARTING
OU RECTABLE  1  FIRST
OU RECTABLE  24  FIRST
OU FILEFORM  FIX
OU PLOTFILE  1  ALL  FIRST  ALL`1`FIRST.plt  10000
OU PLOTFILE  24  ALL  FIRST  ALL`24`FIRST.plt  10001
OU PLOTFILE  ANNUAL  ALL  ALL`ANNUAL.plt  10002
OU FINISHED

** ****************************************************************************
** It is recommended that the user not edit any data below this line
** ****************************************************************************

** BUILDING BLD  0  0  0  10  4
** BUILDING IDN  Q4OAY000
** BUILDING REC  468439.6  3780859.8  95.7  149  141

** AMPTYPE
```

```
** AMPDATUM  -1
** AMPZONE  -1
** AMPHEMISPHERE

** PROJECTION  UTM
** DATUM  WGE
** UNITS  METER
** ZONE  11
** HEMISPHERE  N
** ORIGINLON  0
** ORIGINLAT  0
** PARALLEL1  0
** PARALLEL2  0
** AZIMUTH  0
** SCALEFACT  0
** FALSEEAST  0
** FALSENORTH  0

** POSTFMT  UNFORM
** TEMPLATE USERDEFINED
** AERMODEXE  AERMOD_BREEZE_15181.EXE
** AERMAPEXE  AERMAP_EPA_11103.EXE


 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

↑ *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
    05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
   16:58:03

   PAGE   1
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                            ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.

 **Other Options Specified:
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM10

 **Model Calculates  2 Short Term Average(s) of:   1-HR  24-HR
     and Calculates ANNUAL Averages
```

```
                                                HR Attachment A
 **This Run Includes:     54 Source(s);       1 Source Group(s); and     154 Receptor(s)

               with:     54 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:      0 VOLUME source(s)
                and:      0 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 OPENPIT source(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     5.00 ;  Decay Coef. =    0.000     ;  Rot. Angle
=     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =
0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.6 MB of RAM.

 **Input Runstream File:          AERMOD.INP

 **Output Print File:             AERMOD.OUT


 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
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 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL


                                                *** POINT SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE     STACK   STACK    STACK     STACK    BLDG   URBAN
CAP/  EMIS RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.    HEIGHT  TEMP.   EXIT VEL. DIAMETER  EXISTS SOURCE
HOR   SCALAR
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (DEG.K)  (M/SEC)  (METERS)
    VARY BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - -

 Q4OAY00D         0   0.13100E-06  468363.4 3780793.3     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F000         0   0.13100E-06  468366.1 3780790.0     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F001         0   0.13100E-06  468369.8 3780786.1     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F002         0   0.13100E-06  468374.4 3780782.2     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F003         0   0.13100E-06  468377.8 3780778.8     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F004         0   0.13100E-06  468382.9 3780772.2     0.0     3.00   325.00     0.00     0.10    YES     NO
```

NO												
SFQ5F005	0	0.13100E-06	468385.3	3780769.0	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F006	0	0.13100E-06	468388.6	3780765.4	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F007	0	0.13100E-06	468392.2	3780761.7	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F008	0	0.13100E-06	468396.3	3780756.3	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F009	0	0.13100E-06	468400.0	3780752.2	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00A	0	0.13100E-06	468401.9	3780748.7	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00B	0	0.13100E-06	468410.4	3780738.4	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00C	0	0.13100E-06	468414.7	3780734.8	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00D	0	0.13100E-06	468422.9	3780721.8	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00E	0	0.13100E-06	468418.5	3780725.6	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00F	0	0.13100E-06	468449.7	3780689.7	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00G	0	0.13100E-06	468424.8	3780716.8	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00H	0	0.13100E-06	468428.3	3780714.4	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00I	0	0.13100E-06	468431.1	3780710.7	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00J	0	0.13100E-06	468434.6	3780706.8	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00K	0	0.13100E-06	468438.4	3780702.9	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00L	0	0.13100E-06	468441.2	3780699.4	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00M	0	0.13100E-06	468443.2	3780695.5	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00N	0	0.13100E-06	468446.2	3780692.5	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00O	0	0.13100E-06	468453.5	3780684.8	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00P	0	0.13100E-06	468405.6	3780744.1	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00Q	0	0.13100E-06	468450.1	3780682.8	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00R	0	0.13100E-06	468445.4	3780686.8	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00S	0	0.13100E-06	468439.6	3780695.6	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00T	0	0.13100E-06	468435.3	3780701.0	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00U	0	0.13100E-06	468431.5	3780707.0	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00V	0	0.13100E-06	468426.8	3780712.1	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00W	0	0.13100E-06	468421.1	3780719.5	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00X	0	0.13100E-06	468417.4	3780724.0	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00Y	0	0.13100E-06	468412.4	3780731.7	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F00Z	0	0.13100E-06	468406.9	3780736.5	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F010	0	0.13100E-06	468401.8	3780745.2	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												
SFQ5F011	0	0.13100E-06	468395.8	3780753.4	0.0	3.00	325.00	0.00	0.10	YES	NO	
NO												

```
                                                HR Attachment A
 SFQ5F012         0   0.13100E-06  468390.7 3780760.0     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
   16:58:03

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 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL


                                                *** POINT SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE     STACK   STACK    STACK     STACK    BLDG   URBAN
CAP/  EMIS RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.    HEIGHT  TEMP.   EXIT VEL. DIAMETER  EXISTS SOURCE
HOR   SCALAR
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (DEG.K)  (M/SEC)  (METERS)
    VARY BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - -

 SFQ5F013         0   0.13100E-06  468447.2 3780680.4     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F014         0   0.13100E-06  468440.6 3780688.6     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F015         0   0.13100E-06  468437.0 3780693.6     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F016         0   0.13100E-06  468432.7 3780699.8     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F017         0   0.13100E-06  468428.8 3780705.3     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F018         0   0.13100E-06  468424.4 3780711.0     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F019         0   0.13100E-06  468419.8 3780716.6     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F01A         0   0.13100E-06  468414.9 3780723.6     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F01B         0   0.13100E-06  468409.2 3780730.6     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F01C         0   0.13100E-06  468405.5 3780735.7     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F01D         0   0.13100E-06  468400.9 3780742.3     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F01E         0   0.13100E-06  468361.4 3780789.5     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F01F         0   0.13100E-06  468365.2 3780786.4     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 SFQ5F01G         0   0.13100E-06  468374.8 3780773.9     0.0     3.00   325.00     0.00     0.10    YES     NO
NO
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
   16:58:03

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 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL


                                            *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                           SOURCE IDs
 -----------                                           ----------


  ALL        Q4OAY00D    , SFQ5F000    , SFQ5F001    , SFQ5F002    , SFQ5F003    , SFQ5F004    , SFQ5F005    ,
SFQ5F006    ,
```

HR Attachment A

```
             SFQ5F007    , SFQ5F008    , SFQ5F009    , SFQ5F00A    , SFQ5F00B    , SFQ5F00C    , SFQ5F00D    ,
SFQ5F00E    ,

             SFQ5F00F    , SFQ5F00G    , SFQ5F00H    , SFQ5F00I    , SFQ5F00J    , SFQ5F00K    , SFQ5F00L    ,
SFQ5F00M    ,

             SFQ5F00N    , SFQ5F00O    , SFQ5F00P    , SFQ5F00Q    , SFQ5F00R    , SFQ5F00S    , SFQ5F00T    ,
SFQ5F00U    ,

             SFQ5F00V    , SFQ5F00W    , SFQ5F00X    , SFQ5F00Y    , SFQ5F00Z    , SFQ5F010    , SFQ5F011    ,
SFQ5F012    ,

             SFQ5F013    , SFQ5F014    , SFQ5F015    , SFQ5F016    , SFQ5F017    , SFQ5F018    , SFQ5F019    ,
SFQ5F01A    ,

             SFQ5F01B    , SFQ5F01C    , SFQ5F01D    , SFQ5F01E    , SFQ5F01F    , SFQ5F01G    ,
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
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 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                        *** DIRECTION SPECIFIC BUILDING DIMENSIONS ***


 SOURCE ID: Q4OAY00D
  IFV    BH      BW      BL     XADJ    YADJ     IFV    BH      BW      BL     XADJ    YADJ
    1   10.0,  175.2,  170.0,  -91.3,  -88.3,      2   10.0,  177.0,  158.8,  -70.2,  -88.1,
    3   10.0,  173.4,  142.7,  -47.0,  -85.1,      4   10.0,  164.5,  122.4,  -22.4,  -79.6,
    5   10.0,  150.6,   98.3,    2.8,  -71.7,      6   10.0,  162.1,  117.8,    4.7,  -61.6,
    7   10.0,  172.0,  139.0,    3.9,  -49.6,      8   10.0,  176.7,  155.9,    2.9,  -36.1,
    9   10.0,  176.0,  168.1,    1.8,  -21.5,     10   10.0,  170.0,  175.2,    0.7,   -6.3,
   11   10.0,  158.8,  177.0,   -0.4,    9.2,     12   10.0,  142.7,  173.4,   -1.6,   24.3,
   13   10.0,  122.4,  164.5,   -2.6,   38.7,     14   10.0,   98.3,  150.6,   -3.6,   52.0,
   15   10.0,  117.8,  162.1,  -19.5,   63.6,     16   10.0,  139.0,  172.0,  -36.4,   73.4,
   17   10.0,  155.9,  176.7,  -52.3,   80.9,     18   10.0,  168.1,  176.0,  -66.5,   85.9,
   19   10.0,  175.2,  170.0,  -78.7,   88.3,     20   10.0,  177.0,  158.8,  -88.5,   88.1,
   21   10.0,  173.4,  142.7,  -95.7,   85.1,     22   10.0,  164.5,  122.4,  -99.9,   79.6,
   23   10.0,  150.6,   98.3, -101.1,   71.7,     24   10.0,  162.1,  117.8, -122.5,   61.6,
   25   10.0,  172.0,  139.0, -142.9,   49.6,     26   10.0,  176.7,  155.9, -158.8,   36.1,
   27   10.0,  176.0,  168.1, -170.0,   21.5,     28   10.0,  170.0,  175.2, -176.0,    6.3,
   29   10.0,  158.8,  177.0, -176.6,   -9.2,     30   10.0,  142.7,  173.4, -171.8,  -24.3,
   31   10.0,  122.4,  164.5, -161.9,  -38.7,     32   10.0,   98.3,  150.6, -147.0,  -52.0,
   33   10.0,  117.8,  162.1, -142.7,  -63.6,     34   10.0,  139.0,  172.0, -135.6,  -73.4,
   35   10.0,  155.9,  176.7, -124.5,  -80.9,     36   10.0,  168.1,  176.0, -109.5,  -85.9,


 SOURCE ID: SFQ5F000
  IFV    BH      BW      BL     XADJ    YADJ     IFV    BH      BW      BL     XADJ    YADJ
    1   10.0,  175.2,  170.0,  -88.5,  -85.1,      2   10.0,  177.0,  158.8,  -68.0,  -84.4,
    3   10.0,  173.4,  142.7,  -45.5,  -81.2,      4   10.0,  164.5,  122.4,  -21.7,  -75.4,
    5   10.0,  150.6,   98.3,    2.9,  -67.4,      6   10.0,  162.1,  117.8,    4.0,  -57.4,
    7   10.0,  172.0,  139.0,    2.5,  -45.6,      8   10.0,  176.7,  155.9,    0.8,  -32.4,
    9   10.0,  176.0,  168.1,   -0.9,  -18.2,     10   10.0,  170.0,  175.2,   -2.5,   -3.5,
   11   10.0,  158.8,  177.0,   -4.1,   11.3,     12   10.0,  142.7,  173.4,   -5.5,   25.8,
   13   10.0,  122.4,  164.5,   -6.8,   39.5,     14   10.0,   98.3,  150.6,   -7.9,   52.0,
   15   10.0,  117.8,  162.1,  -23.7,   62.9,     16   10.0,  139.0,  172.0,  -40.4,   72.0,
   17   10.0,  155.9,  176.7,  -56.0,   78.8,     18   10.0,  168.1,  176.0,  -69.8,   83.2,
   19   10.0,  175.2,  170.0,  -81.5,   85.1,     20   10.0,  177.0,  158.8,  -90.7,   84.4,
   21   10.0,  173.4,  142.7,  -97.2,   81.2,     22   10.0,  164.5,  122.4, -100.7,   75.4,
   23   10.0,  150.6,   98.3, -101.2,   67.4,     24   10.0,  162.1,  117.8, -121.9,   57.4,
   25   10.0,  172.0,  139.0, -141.5,   45.6,     26   10.0,  176.7,  155.9, -156.7,   32.4,
   27   10.0,  176.0,  168.1, -167.3,   18.2,     28   10.0,  170.0,  175.2, -172.7,    3.5,
   29   10.0,  158.8,  177.0, -172.9,  -11.3,     30   10.0,  142.7,  173.4, -167.9,  -25.8,
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31	10.0,	122.4,	164.5,	-157.7,	-39.5,	32	10.0,	98.3,	150.6,	-142.8,	-52.0,
33	10.0,	117.8,	162.1,	-138.4,	-62.9,	34	10.0,	139.0,	172.0,	-131.6,	-72.0,
35	10.0,	155.9,	176.7,	-120.7,	-78.8,	36	10.0,	168.1,	176.0,	-106.2,	-83.2,

SOURCE ID: SFQ5F001

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-85.3,	-80.8,	2	10.0,	177.0,	158.8,	-65.6,	-79.6,
3	10.0,	173.4,	142.7,	-44.0,	-76.0,	4	10.0,	164.5,	122.4,	-21.1,	-70.1,
5	10.0,	150.6,	98.3,	2.6,	-62.1,	6	10.0,	162.1,	117.8,	2.8,	-52.1,
7	10.0,	172.0,	139.0,	0.3,	-40.6,	8	10.0,	176.7,	155.9,	-2.2,	-27.9,
9	10.0,	176.0,	168.1,	-4.6,	-14.3,	10	10.0,	170.0,	175.2,	-6.8,	-0.3,
11	10.0,	158.8,	177.0,	-8.9,	13.7,	12	10.0,	142.7,	173.4,	-10.7,	27.4,
13	10.0,	122.4,	164.5,	-12.2,	40.1,	14	10.0,	98.3,	150.6,	-13.3,	51.7,
15	10.0,	117.8,	162.1,	-28.9,	61.7,	16	10.0,	139.0,	172.0,	-45.4,	69.8,
17	10.0,	155.9,	176.7,	-60.5,	75.8,	18	10.0,	168.1,	176.0,	-73.7,	79.5,
19	10.0,	175.2,	170.0,	-84.7,	80.8,	20	10.0,	177.0,	158.8,	-93.1,	79.6,
21	10.0,	173.4,	142.7,	-98.7,	76.0,	22	10.0,	164.5,	122.4,	-101.3,	70.1,
23	10.0,	150.6,	98.3,	-100.8,	62.1,	24	10.0,	162.1,	117.8,	-120.6,	52.1,
25	10.0,	172.0,	139.0,	-139.3,	40.6,	26	10.0,	176.7,	155.9,	-153.8,	27.9,
27	10.0,	176.0,	168.1,	-163.6,	14.3,	28	10.0,	170.0,	175.2,	-168.4,	0.3,
29	10.0,	158.8,	177.0,	-168.1,	-13.7,	30	10.0,	142.7,	173.4,	-162.7,	-27.4,
31	10.0,	122.4,	164.5,	-152.4,	-40.1,	32	10.0,	98.3,	150.6,	-137.4,	-51.7,
33	10.0,	117.8,	162.1,	-133.2,	-61.7,	34	10.0,	139.0,	172.0,	-126.7,	-69.8,
35	10.0,	155.9,	176.7,	-116.2,	-75.8,	36	10.0,	168.1,	176.0,	-102.3,	-79.5,

SOURCE ID: SFQ5F002

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-82.2,	-75.6,	2	10.0,	177.0,	158.8,	-63.5,	-73.9,
3	10.0,	173.4,	142.7,	-42.9,	-70.1,	4	10.0,	164.5,	122.4,	-21.0,	-64.1,
5	10.0,	150.6,	98.3,	1.5,	-56.1,	6	10.0,	162.1,	117.8,	0.7,	-46.5,
7	10.0,	172.0,	139.0,	-2.7,	-35.4,	8	10.0,	176.7,	155.9,	-6.0,	-23.3,
9	10.0,	176.0,	168.1,	-9.2,	-10.4,	10	10.0,	170.0,	175.2,	-12.1,	2.8,
11	10.0,	158.8,	177.0,	-14.6,	15.8,	12	10.0,	142.7,	173.4,	-16.6,	28.4,
13	10.0,	122.4,	164.5,	-18.2,	40.2,	14	10.0,	98.3,	150.6,	-19.2,	50.7,
15	10.0,	117.8,	162.1,	-34.6,	59.7,	16	10.0,	139.0,	172.0,	-50.6,	66.8,
17	10.0,	155.9,	176.7,	-65.1,	72.0,	18	10.0,	168.1,	176.0,	-77.6,	74.9,
19	10.0,	175.2,	170.0,	-87.7,	75.6,	20	10.0,	177.0,	158.8,	-95.2,	73.9,
21	10.0,	173.4,	142.7,	-99.8,	70.1,	22	10.0,	164.5,	122.4,	-101.3,	64.1,
23	10.0,	150.6,	98.3,	-99.8,	56.1,	24	10.0,	162.1,	117.8,	-118.6,	46.5,
25	10.0,	172.0,	139.0,	-136.3,	35.4,	26	10.0,	176.7,	155.9,	-149.9,	23.3,
27	10.0,	176.0,	168.1,	-159.0,	10.4,	28	10.0,	170.0,	175.2,	-163.2,	-2.8,
29	10.0,	158.8,	177.0,	-162.4,	-15.8,	30	10.0,	142.7,	173.4,	-156.8,	-28.4,
31	10.0,	122.4,	164.5,	-146.3,	-40.2,	32	10.0,	98.3,	150.6,	-131.4,	-50.7,
33	10.0,	117.8,	162.1,	-127.5,	-59.7,	34	10.0,	139.0,	172.0,	-121.4,	-66.8,
35	10.0,	155.9,	176.7,	-111.6,	-72.0,	36	10.0,	168.1,	176.0,	-98.4,	-74.9,

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: SFQ5F003

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-79.5,	-71.6,	2	10.0,	177.0,	158.8,	-61.5,	-69.6,
3	10.0,	173.4,	142.7,	-41.7,	-65.4,	4	10.0,	164.5,	122.4,	-20.6,	-59.3,
5	10.0,	150.6,	98.3,	1.1,	-51.3,	6	10.0,	162.1,	117.8,	-0.5,	-41.8,
7	10.0,	172.0,	139.0,	-4.7,	-31.0,	8	10.0,	176.7,	155.9,	-8.8,	-19.3,
9	10.0,	176.0,	168.1,	-12.6,	-7.0,	10	10.0,	170.0,	175.2,	-16.0,	5.5,
11	10.0,	158.8,	177.0,	-18.9,	17.9,	12	10.0,	142.7,	173.4,	-21.3,	29.7,

13	10.0,	122.4,	164.5,	-23.0,	40.6,	14	10.0,	98.3,	150.6,	-24.0,	50.3,
15	10.0,	117.8,	162.1,	-39.2,	58.4,	16	10.0,	139.0,	172.0,	-55.0,	64.8,
17	10.0,	155.9,	176.7,	-69.0,	69.2,	18	10.0,	168.1,	176.0,	-81.0,	71.5,
19	10.0,	175.2,	170.0,	-90.5,	71.6,	20	10.0,	177.0,	158.8,	-97.2,	69.6,
21	10.0,	173.4,	142.7,	-101.0,	65.4,	22	10.0,	164.5,	122.4,	-101.8,	59.3,
23	10.0,	150.6,	98.3,	-99.4,	51.3,	24	10.0,	162.1,	117.8,	-117.3,	41.8,
25	10.0,	172.0,	139.0,	-134.3,	31.0,	26	10.0,	176.7,	155.9,	-147.2,	19.3,
27	10.0,	176.0,	168.1,	-155.6,	7.0,	28	10.0,	170.0,	175.2,	-159.2,	-5.5,
29	10.0,	158.8,	177.0,	-158.1,	-17.9,	30	10.0,	142.7,	173.4,	-152.1,	-29.7,
31	10.0,	122.4,	164.5,	-141.5,	-40.6,	32	10.0,	98.3,	150.6,	-126.6,	-50.3,
33	10.0,	117.8,	162.1,	-122.9,	-58.4,	34	10.0,	139.0,	172.0,	-117.1,	-64.8,
35	10.0,	155.9,	176.7,	-107.7,	-69.2,	36	10.0,	168.1,	176.0,	-95.0,	-71.5,

SOURCE ID: SFQ5F004

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-73.9,	-65.5,	2	10.0,	177.0,	158.8,	-57.1,	-62.5,
3	10.0,	173.4,	142.7,	-38.5,	-57.7,	4	10.0,	164.5,	122.4,	-18.8,	-51.1,
5	10.0,	150.6,	98.3,	1.5,	-43.0,	6	10.0,	162.1,	117.8,	-1.6,	-33.6,
7	10.0,	172.0,	139.0,	-7.2,	-23.1,	8	10.0,	176.7,	155.9,	-12.7,	-11.9,
9	10.0,	176.0,	168.1,	-17.7,	-0.4,	10	10.0,	170.0,	175.2,	-22.2,	11.1,
11	10.0,	158.8,	177.0,	-26.0,	22.3,	12	10.0,	142.7,	173.4,	-29.0,	32.8,
13	10.0,	122.4,	164.5,	-31.1,	42.4,	14	10.0,	98.3,	150.6,	-32.3,	50.6,
15	10.0,	117.8,	162.1,	-47.5,	57.3,	16	10.0,	139.0,	172.0,	-62.9,	62.3,
17	10.0,	155.9,	176.7,	-76.4,	65.3,	18	10.0,	168.1,	176.0,	-87.6,	66.4,
19	10.0,	175.2,	170.0,	-96.1,	65.5,	20	10.0,	177.0,	158.8,	-101.7,	62.5,
21	10.0,	173.4,	142.7,	-104.2,	57.7,	22	10.0,	164.5,	122.4,	-103.5,	51.1,
23	10.0,	150.6,	98.3,	-99.7,	43.0,	24	10.0,	162.1,	117.8,	-116.2,	33.6,
25	10.0,	172.0,	139.0,	-131.8,	23.1,	26	10.0,	176.7,	155.9,	-143.3,	11.9,
27	10.0,	176.0,	168.1,	-150.5,	0.4,	28	10.0,	170.0,	175.2,	-153.1,	-11.1,
29	10.0,	158.8,	177.0,	-151.0,	-22.3,	30	10.0,	142.7,	173.4,	-144.4,	-32.8,
31	10.0,	122.4,	164.5,	-133.4,	-42.4,	32	10.0,	98.3,	150.6,	-118.3,	-50.6,
33	10.0,	117.8,	162.1,	-114.6,	-57.3,	34	10.0,	139.0,	172.0,	-109.1,	-62.3,
35	10.0,	155.9,	176.7,	-100.3,	-65.3,	36	10.0,	168.1,	176.0,	-88.4,	-66.4,

SOURCE ID: SFQ5F005

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-71.1,	-62.5,	2	10.0,	177.0,	158.8,	-54.9,	-59.2,
3	10.0,	173.4,	142.7,	-36.9,	-54.0,	4	10.0,	164.5,	122.4,	-17.9,	-47.2,
5	10.0,	150.6,	98.3,	1.7,	-39.0,	6	10.0,	162.1,	117.8,	-2.1,	-29.6,
7	10.0,	172.0,	139.0,	-8.4,	-19.3,	8	10.0,	176.7,	155.9,	-14.5,	-8.4,
9	10.0,	176.0,	168.1,	-20.1,	2.8,	10	10.0,	170.0,	175.2,	-25.1,	13.9,
11	10.0,	158.8,	177.0,	-29.3,	24.5,	12	10.0,	142.7,	173.4,	-32.7,	34.4,
13	10.0,	122.4,	164.5,	-35.0,	43.3,	14	10.0,	98.3,	150.6,	-36.3,	50.8,
15	10.0,	117.8,	162.1,	-51.5,	56.8,	16	10.0,	139.0,	172.0,	-66.8,	61.1,
17	10.0,	155.9,	176.7,	-80.0,	63.5,	18	10.0,	168.1,	176.0,	-90.8,	64.0,
19	10.0,	175.2,	170.0,	-98.8,	62.5,	20	10.0,	177.0,	158.8,	-103.9,	59.2,
21	10.0,	173.4,	142.7,	-105.8,	54.0,	22	10.0,	164.5,	122.4,	-104.5,	47.2,
23	10.0,	150.6,	98.3,	-100.0,	39.0,	24	10.0,	162.1,	117.8,	-115.7,	29.6,
25	10.0,	172.0,	139.0,	-130.6,	19.3,	26	10.0,	176.7,	155.9,	-141.5,	8.4,
27	10.0,	176.0,	168.1,	-148.1,	-2.8,	28	10.0,	170.0,	175.2,	-150.2,	-13.9,
29	10.0,	158.8,	177.0,	-147.7,	-24.5,	30	10.0,	142.7,	173.4,	-140.7,	-34.4,
31	10.0,	122.4,	164.5,	-129.5,	-43.3,	32	10.0,	98.3,	150.6,	-114.3,	-50.8,
33	10.0,	117.8,	162.1,	-110.6,	-56.8,	34	10.0,	139.0,	172.0,	-105.3,	-61.1,
35	10.0,	155.9,	176.7,	-96.7,	-63.5,	36	10.0,	168.1,	176.0,	-85.2,	-64.0,

SOURCE ID: SFQ5F006

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-68.2,	-58.7,	2	10.0,	177.0,	158.8,	-52.6,	-54.8,
3	10.0,	173.4,	142.7,	-35.5,	-49.4,	4	10.0,	164.5,	122.4,	-17.3,	-42.4,
5	10.0,	150.6,	98.3,	1.5,	-34.1,	6	10.0,	162.1,	117.8,	-3.1,	-24.8,
7	10.0,	172.0,	139.0,	-10.3,	-14.8,	8	10.0,	176.7,	155.9,	-17.1,	-4.2,
9	10.0,	176.0,	168.1,	-23.4,	6.4,	10	10.0,	170.0,	175.2,	-28.9,	16.8,
11	10.0,	158.8,	177.0,	-33.6,	26.8,	12	10.0,	142.7,	173.4,	-37.3,	35.9,
13	10.0,	122.4,	164.5,	-39.9,	43.9,	14	10.0,	98.3,	150.6,	-41.2,	50.6,

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                                                HR Attachment A
  15   10.0,  117.8,  162.1,  -56.2,   55.8,     16   10.0,  139.0,  172.0,  -71.3,   59.2,
  17   10.0,  155.9,  176.7,  -84.1,   60.9,     18   10.0,  168.1,  176.0,  -94.4,   60.7,
  19   10.0,  175.2,  170.0, -101.8,   58.7,     20   10.0,  177.0,  158.8, -106.1,   54.8,
  21   10.0,  173.4,  142.7, -107.2,   49.4,     22   10.0,  164.5,  122.4, -105.1,   42.4,
  23   10.0,  150.6,   98.3,  -99.8,   34.1,     24   10.0,  162.1,  117.8, -114.7,   24.8,
  25   10.0,  172.0,  139.0, -128.7,   14.8,     26   10.0,  176.7,  155.9, -138.9,    4.2,
  27   10.0,  176.0,  168.1, -144.8,   -6.4,     28   10.0,  170.0,  175.2, -146.3,  -16.8,
  29   10.0,  158.8,  177.0, -143.4,  -26.8,     30   10.0,  142.7,  173.4, -136.1,  -35.9,
  31   10.0,  122.4,  164.5, -124.6,  -43.9,     32   10.0,   98.3,  150.6, -109.4,  -50.6,
  33   10.0,  117.8,  162.1, -105.9,  -55.8,     34   10.0,  139.0,  172.0, -100.8,  -59.2,
  35   10.0,  155.9,  176.7,  -92.6,  -60.9,     36   10.0,  168.1,  176.0,  -81.6,  -60.7,

 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                   ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                            ***
   16:58:03

   PAGE   7
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                        *** DIRECTION SPECIFIC BUILDING DIMENSIONS ***


 SOURCE ID: SFQ5F007
  IFV    BH      BW      BL     XADJ    YADJ     IFV    BH      BW      BL     XADJ    YADJ
    1   10.0,  175.2,  170.0,  -65.1,  -54.5,      2   10.0,  177.0,  158.8,  -50.4,  -50.2,
    3   10.0,  173.4,  142.7,  -34.1,  -44.4,      4   10.0,  164.5,  122.4,  -16.8,  -37.3,
    5   10.0,  150.6,   98.3,    1.1,  -29.0,      6   10.0,  162.1,  117.8,   -4.4,  -19.8,
    7   10.0,  172.0,  139.0,  -12.4,  -10.1,      8   10.0,  176.7,  155.9,  -20.0,    0.0,
    9   10.0,  176.0,  168.1,  -27.0,   10.1,     10   10.0,  170.0,  175.2,  -33.1,   19.9,
   11   10.0,  158.8,  177.0,  -38.3,   29.0,     12   10.0,  142.7,  173.4,  -42.3,   37.3,
   13   10.0,  122.4,  164.5,  -45.0,   44.4,     14   10.0,   98.3,  150.6,  -46.3,   50.2,
   15   10.0,  117.8,  162.1,  -61.3,   54.5,     16   10.0,  139.0,  172.0,  -76.0,   57.1,
   17   10.0,  155.9,  176.7,  -88.4,   58.0,     18   10.0,  168.1,  176.0,  -98.1,   57.1,
   19   10.0,  175.2,  170.0, -104.8,   54.5,     20   10.0,  177.0,  158.8, -108.4,   50.2,
   21   10.0,  173.4,  142.7, -108.7,   44.4,     22   10.0,  164.5,  122.4, -105.6,   37.3,
   23   10.0,  150.6,   98.3,  -99.4,   29.0,     24   10.0,  162.1,  117.8, -113.4,   19.8,
   25   10.0,  172.0,  139.0, -126.6,   10.1,     26   10.0,  176.7,  155.9, -136.0,   -0.0,
   27   10.0,  176.0,  168.1, -141.2,  -10.1,     28   10.0,  170.0,  175.2, -142.1,  -19.9,
   29   10.0,  158.8,  177.0, -138.7,  -29.0,     30   10.0,  142.7,  173.4, -131.1,  -37.3,
   31   10.0,  122.4,  164.5, -119.5,  -44.4,     32   10.0,   98.3,  150.6, -104.3,  -50.2,
   33   10.0,  117.8,  162.1, -100.9,  -54.5,     34   10.0,  139.0,  172.0,  -96.1,  -57.1,
   35   10.0,  155.9,  176.7,  -88.3,  -58.0,     36   10.0,  168.1,  176.0,  -77.9,  -57.1,


 SOURCE ID: SFQ5F008
  IFV    BH      BW      BL     XADJ    YADJ     IFV    BH      BW      BL     XADJ    YADJ
    1   10.0,  175.2,  170.0,  -60.5,  -49.5,      2   10.0,  177.0,  158.8,  -46.7,  -44.5,
    3   10.0,  173.4,  142.7,  -31.4,  -38.1,      4   10.0,  164.5,  122.4,  -15.2,  -30.6,
    5   10.0,  150.6,   98.3,    1.4,  -22.2,      6   10.0,  162.1,  117.8,   -5.3,  -13.1,
    7   10.0,  172.0,  139.0,  -14.4,   -3.6,      8   10.0,  176.7,  155.9,  -23.1,    6.0,
    9   10.0,  176.0,  168.1,  -31.1,   15.5,     10   10.0,  170.0,  175.2,  -38.1,   24.5,
   11   10.0,  158.8,  177.0,  -44.0,   32.7,     12   10.0,  142.7,  173.4,  -48.5,   39.9,
   13   10.0,  122.4,  164.5,  -51.6,   45.9,     14   10.0,   98.3,  150.6,  -53.1,   50.6,
   15   10.0,  117.8,  162.1,  -68.0,   53.6,     16   10.0,  139.0,  172.0,  -82.5,   55.1,
   17   10.0,  155.9,  176.7,  -94.4,   54.9,     18   10.0,  168.1,  176.0, -103.5,   53.0,
   19   10.0,  175.2,  170.0, -109.5,   49.5,     20   10.0,  177.0,  158.8, -112.1,   44.5,
   21   10.0,  173.4,  142.7, -111.3,   38.1,     22   10.0,  164.5,  122.4, -107.1,   30.6,
   23   10.0,  150.6,   98.3,  -99.7,   22.2,     24   10.0,  162.1,  117.8, -112.6,   13.1,
   25   10.0,  172.0,  139.0, -124.6,    3.6,     26   10.0,  176.7,  155.9, -132.9,   -6.0,
   27   10.0,  176.0,  168.1, -137.1,  -15.5,     28   10.0,  170.0,  175.2, -137.1,  -24.5,
   29   10.0,  158.8,  177.0, -133.0,  -32.7,     30   10.0,  142.7,  173.4, -124.8,  -39.9,
   31   10.0,  122.4,  164.5, -112.9,  -45.9,     32   10.0,   98.3,  150.6,  -97.5,  -50.6,
   33   10.0,  117.8,  162.1,  -94.1,  -53.6,     34   10.0,  139.0,  172.0,  -89.6,  -55.1,
   35   10.0,  155.9,  176.7,  -82.3,  -54.9,     36   10.0,  168.1,  176.0,  -72.5,  -53.0,
```

HR Attachment A

SOURCE ID: SFQ5F009

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-57.1,	-45.1,	2	10.0,	177.0,	158.8,	-44.1,	-39.6,
3	10.0,	173.4,	142.7,	-29.8,	-32.9,	4	10.0,	164.5,	122.4,	-14.5,	-25.2,
5	10.0,	150.6,	98.3,	1.2,	-16.7,	6	10.0,	162.1,	117.8,	-6.4,	-7.7,
7	10.0,	172.0,	139.0,	-16.5,	1.6,	8	10.0,	176.7,	155.9,	-26.0,	10.7,
9	10.0,	176.0,	168.1,	-34.8,	19.6,	10	10.0,	170.0,	175.2,	-42.5,	27.9,
11	10.0,	158.8,	177.0,	-48.9,	35.3,	12	10.0,	142.7,	173.4,	-53.8,	41.6,
13	10.0,	122.4,	164.5,	-57.1,	46.7,	14	10.0,	98.3,	150.6,	-58.6,	50.4,
15	10.0,	117.8,	162.1,	-73.4,	52.5,	16	10.0,	139.0,	172.0,	-87.6,	53.0,
17	10.0,	155.9,	176.7,	-99.1,	51.9,	18	10.0,	168.1,	176.0,	-107.6,	49.3,
19	10.0,	175.2,	170.0,	-112.8,	45.1,	20	10.0,	177.0,	158.8,	-114.6,	39.6,
21	10.0,	173.4,	142.7,	-113.0,	32.9,	22	10.0,	164.5,	122.4,	-107.9,	25.2,
23	10.0,	150.6,	98.3,	-99.5,	16.7,	24	10.0,	162.1,	117.8,	-111.4,	7.7,
25	10.0,	172.0,	139.0,	-122.5,	-1.6,	26	10.0,	176.7,	155.9,	-129.9,	-10.7,
27	10.0,	176.0,	168.1,	-133.4,	-19.6,	28	10.0,	170.0,	175.2,	-132.8,	-27.9,
29	10.0,	158.8,	177.0,	-128.1,	-35.3,	30	10.0,	142.7,	173.4,	-119.6,	-41.6,
31	10.0,	122.4,	164.5,	-107.4,	-46.7,	32	10.0,	98.3,	150.6,	-92.0,	-50.4,
33	10.0,	117.8,	162.1,	-88.8,	-52.5,	34	10.0,	139.0,	172.0,	-84.5,	-53.0,
35	10.0,	155.9,	176.7,	-77.6,	-51.9,	36	10.0,	168.1,	176.0,	-68.4,	-49.3,

SOURCE ID: SFQ5F00A

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-54.0,	-42.7,	2	10.0,	177.0,	158.8,	-41.5,	-36.6,
3	10.0,	173.4,	142.7,	-27.7,	-29.5,	4	10.0,	164.5,	122.4,	-13.0,	-21.5,
5	10.0,	150.6,	98.3,	2.0,	-12.8,	6	10.0,	162.1,	117.8,	-6.3,	-3.7,
7	10.0,	172.0,	139.0,	-17.1,	5.5,	8	10.0,	176.7,	155.9,	-27.3,	14.5,
9	10.0,	176.0,	168.1,	-36.7,	23.1,	10	10.0,	170.0,	175.2,	-44.9,	31.0,
11	10.0,	158.8,	177.0,	-51.9,	37.9,	12	10.0,	142.7,	173.4,	-57.2,	43.7,
13	10.0,	122.4,	164.5,	-60.8,	48.2,	14	10.0,	98.3,	150.6,	-62.5,	51.1,
15	10.0,	117.8,	162.1,	-77.4,	52.6,	16	10.0,	139.0,	172.0,	-91.5,	52.4,
17	10.0,	155.9,	176.7,	-102.9,	50.7,	18	10.0,	168.1,	176.0,	-111.1,	47.4,
19	10.0,	175.2,	170.0,	-116.0,	42.7,	20	10.0,	177.0,	158.8,	-117.3,	36.6,
21	10.0,	173.4,	142.7,	-115.1,	29.5,	22	10.0,	164.5,	122.4,	-109.3,	21.5,
23	10.0,	150.6,	98.3,	-100.3,	12.8,	24	10.0,	162.1,	117.8,	-111.5,	3.7,
25	10.0,	172.0,	139.0,	-121.9,	-5.5,	26	10.0,	176.7,	155.9,	-128.7,	-14.5,
27	10.0,	176.0,	168.1,	-131.5,	-23.1,	28	10.0,	170.0,	175.2,	-130.3,	-31.0,
29	10.0,	158.8,	177.0,	-125.1,	-37.9,	30	10.0,	142.7,	173.4,	-116.2,	-43.7,
31	10.0,	122.4,	164.5,	-103.7,	-48.2,	32	10.0,	98.3,	150.6,	-88.1,	-51.1,
33	10.0,	117.8,	162.1,	-84.8,	-52.6,	34	10.0,	139.0,	172.0,	-80.5,	-52.4,
35	10.0,	155.9,	176.7,	-73.8,	-50.7,	36	10.0,	168.1,	176.0,	-64.9,	-47.4,

**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: SFQ5F00B

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-45.3,	-32.5,	2	10.0,	177.0,	158.8,	-34.7,	-25.1,
3	10.0,	173.4,	142.7,	-23.0,	-17.0,	4	10.0,	164.5,	122.4,	-10.6,	-8.3,
5	10.0,	150.6,	98.3,	2.1,	0.6,	6	10.0,	162.1,	117.8,	-8.5,	9.5,
7	10.0,	172.0,	139.0,	-21.5,	18.1,	8	10.0,	176.7,	155.9,	-33.9,	26.1,
9	10.0,	176.0,	168.1,	-45.2,	33.4,	10	10.0,	170.0,	175.2,	-55.1,	39.6,
11	10.0,	158.8,	177.0,	-63.4,	44.7,	12	10.0,	142.7,	173.4,	-69.7,	48.4,
13	10.0,	122.4,	164.5,	-73.9,	50.6,	14	10.0,	98.3,	150.6,	-75.9,	51.3,
15	10.0,	117.8,	162.1,	-90.5,	50.4,	16	10.0,	139.0,	172.0,	-104.1,	48.0,
17	10.0,	155.9,	176.7,	-114.5,	44.1,	18	10.0,	168.1,	176.0,	-121.4,	38.9,
19	10.0,	175.2,	170.0,	-124.6,	32.5,	20	10.0,	177.0,	158.8,	-124.1,	25.1,
21	10.0,	173.4,	142.7,	-119.7,	17.0,	22	10.0,	164.5,	122.4,	-111.8,	8.3,

23	10.0,	150.6,	98.3,	-100.4,	-0.6,	24	10.0,	162.1,	117.8,	-109.3,	-9.5,
25	10.0,	172.0,	139.0,	-117.5,	-18.1,	26	10.0,	176.7,	155.9,	-122.1,	-26.1,
27	10.0,	176.0,	168.1,	-123.0,	-33.4,	28	10.0,	170.0,	175.2,	-120.1,	-39.6,
29	10.0,	158.8,	177.0,	-113.6,	-44.7,	30	10.0,	142.7,	173.4,	-103.7,	-48.4,
31	10.0,	122.4,	164.5,	-90.6,	-50.6,	32	10.0,	98.3,	150.6,	-74.8,	-51.3,
33	10.0,	117.8,	162.1,	-71.6,	-50.4,	34	10.0,	139.0,	172.0,	-68.0,	-48.0,
35	10.0,	155.9,	176.7,	-62.2,	-44.1,	36	10.0,	168.1,	176.0,	-54.6,	-38.9,

SOURCE ID: SFQ5F00C

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-42.5,	-27.7,	2	10.0,	177.0,	158.8,	-32.8,	-19.9,
3	10.0,	173.4,	142.7,	-22.0,	-11.5,	4	10.0,	164.5,	122.4,	-10.6,	-2.7,
5	10.0,	150.6,	98.3,	1.1,	6.1,	6	10.0,	162.1,	117.8,	-10.5,	14.7,
7	10.0,	172.0,	139.0,	-24.3,	22.9,	8	10.0,	176.7,	155.9,	-37.5,	30.4,
9	10.0,	176.0,	168.1,	-49.5,	37.0,	10	10.0,	170.0,	175.2,	-60.0,	42.4,
11	10.0,	158.8,	177.0,	-68.6,	46.6,	12	10.0,	142.7,	173.4,	-75.2,	49.3,
13	10.0,	122.4,	164.5,	-79.5,	50.6,	14	10.0,	98.3,	150.6,	-81.4,	50.3,
15	10.0,	117.8,	162.1,	-95.8,	48.5,	16	10.0,	139.0,	172.0,	-109.0,	45.2,
17	10.0,	155.9,	176.7,	-118.8,	40.5,	18	10.0,	168.1,	176.0,	-125.0,	34.6,
19	10.0,	175.2,	170.0,	-127.4,	27.7,	20	10.0,	177.0,	158.8,	-126.0,	19.9,
21	10.0,	173.4,	142.7,	-120.7,	11.5,	22	10.0,	164.5,	122.4,	-111.8,	2.7,
23	10.0,	150.6,	98.3,	-99.4,	-6.1,	24	10.0,	162.1,	117.8,	-107.4,	-14.7,
25	10.0,	172.0,	139.0,	-114.7,	-22.9,	26	10.0,	176.7,	155.9,	-118.5,	-30.4,
27	10.0,	176.0,	168.1,	-118.7,	-37.0,	28	10.0,	170.0,	175.2,	-115.3,	-42.4,
29	10.0,	158.8,	177.0,	-108.4,	-46.6,	30	10.0,	142.7,	173.4,	-98.2,	-49.3,
31	10.0,	122.4,	164.5,	-85.0,	-50.6,	32	10.0,	98.3,	150.6,	-69.2,	-50.3,
33	10.0,	117.8,	162.1,	-66.3,	-48.5,	34	10.0,	139.0,	172.0,	-63.1,	-45.2,
35	10.0,	155.9,	176.7,	-57.9,	-40.5,	36	10.0,	168.1,	176.0,	-51.0,	-34.6,

SOURCE ID: SFQ5F00D

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-31.2,	-17.3,	2	10.0,	177.0,	158.8,	-23.4,	-7.7,
3	10.0,	173.4,	142.7,	-14.9,	2.1,	4	10.0,	164.5,	122.4,	-5.9,	11.9,
5	10.0,	150.6,	98.3,	3.2,	21.3,	6	10.0,	162.1,	117.8,	-11.1,	30.1,
7	10.0,	172.0,	139.0,	-27.6,	37.9,	8	10.0,	176.7,	155.9,	-43.3,	44.6,
9	10.0,	176.0,	168.1,	-57.7,	50.0,	10	10.0,	170.0,	175.2,	-70.3,	53.8,
11	10.0,	158.8,	177.0,	-80.8,	56.0,	12	10.0,	142.7,	173.4,	-88.8,	56.5,
13	10.0,	122.4,	164.5,	-94.2,	55.3,	14	10.0,	98.3,	150.6,	-96.6,	52.4,
15	10.0,	117.8,	162.1,	-111.2,	47.9,	16	10.0,	139.0,	172.0,	-124.0,	41.9,
17	10.0,	155.9,	176.7,	-133.0,	34.7,	18	10.0,	168.1,	176.0,	-138.0,	26.4,
19	10.0,	175.2,	170.0,	-138.8,	17.3,	20	10.0,	177.0,	158.8,	-135.4,	7.7,
21	10.0,	173.4,	142.7,	-127.9,	-2.1,	22	10.0,	164.5,	122.4,	-116.5,	-11.9,
23	10.0,	150.6,	98.3,	-101.5,	-21.3,	24	10.0,	162.1,	117.8,	-106.8,	-30.1,
25	10.0,	172.0,	139.0,	-111.4,	-37.9,	26	10.0,	176.7,	155.9,	-112.6,	-44.6,
27	10.0,	176.0,	168.1,	-110.5,	-50.0,	28	10.0,	170.0,	175.2,	-104.9,	-53.8,
29	10.0,	158.8,	177.0,	-96.2,	-56.0,	30	10.0,	142.7,	173.4,	-84.6,	-56.5,
31	10.0,	122.4,	164.5,	-70.3,	-55.3,	32	10.0,	98.3,	150.6,	-54.0,	-52.4,
33	10.0,	117.8,	162.1,	-51.0,	-47.9,	34	10.0,	139.0,	172.0,	-48.1,	-41.9,
35	10.0,	155.9,	176.7,	-43.7,	-34.7,	36	10.0,	168.1,	176.0,	-38.0,	-26.4,

SOURCE ID: SFQ5F00E

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-34.1,	-22.3,	2	10.0,	177.0,	158.8,	-25.4,	-13.1,
3	10.0,	173.4,	142.7,	-16.0,	-3.6,	4	10.0,	164.5,	122.4,	-6.0,	6.1,
5	10.0,	150.6,	98.3,	4.1,	15.6,	6	10.0,	162.1,	117.8,	-9.2,	24.6,
7	10.0,	172.0,	139.0,	-24.8,	32.9,	8	10.0,	176.7,	155.9,	-39.6,	40.1,
9	10.0,	176.0,	168.1,	-53.3,	46.2,	10	10.0,	170.0,	175.2,	-65.3,	50.8,
11	10.0,	158.8,	177.0,	-75.4,	53.9,	12	10.0,	142.7,	173.4,	-83.1,	55.4,
13	10.0,	122.4,	164.5,	-88.3,	55.2,	14	10.0,	98.3,	150.6,	-90.9,	53.3,
15	10.0,	117.8,	162.1,	-105.7,	49.8,	16	10.0,	139.0,	172.0,	-118.9,	44.7,
17	10.0,	155.9,	176.7,	-128.5,	38.3,	18	10.0,	168.1,	176.0,	-134.2,	30.8,
19	10.0,	175.2,	170.0,	-135.8,	22.3,	20	10.0,	177.0,	158.8,	-133.3,	13.1,
21	10.0,	173.4,	142.7,	-126.8,	3.6,	22	10.0,	164.5,	122.4,	-116.4,	-6.1,
23	10.0,	150.6,	98.3,	-102.4,	-15.6,	24	10.0,	162.1,	117.8,	-108.7,	-24.6,

```
                                                HR Attachment A
  25   10.0,  172.0,  139.0, -114.2,  -32.9,     26   10.0,  176.7,  155.9, -116.3,  -40.1,
  27   10.0,  176.0,  168.1, -114.9,  -46.2,     28   10.0,  170.0,  175.2, -109.9,  -50.8,
  29   10.0,  158.8,  177.0, -101.6,  -53.9,     30   10.0,  142.7,  173.4,  -90.3,  -55.4,
  31   10.0,  122.4,  164.5,  -76.2,  -55.2,     32   10.0,   98.3,  150.6,  -59.7,  -53.3,
  33   10.0,  117.8,  162.1,  -56.5,  -49.8,     34   10.0,  139.0,  172.0,  -53.1,  -44.7,
  35   10.0,  155.9,  176.7,  -48.2,  -38.3,     36   10.0,  168.1,  176.0,  -41.8,  -30.8,

 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
   16:58:03

   PAGE   9
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                        *** DIRECTION SPECIFIC BUILDING DIMENSIONS ***


 SOURCE ID: SFQ5F00F
  IFV    BH      BW      BL     XADJ    YADJ     IFV    BH      BW      BL     XADJ    YADJ
    1   10.0,  175.2,  170.0,   -4.2,   14.7,      2   10.0,  177.0,  158.8,   -2.4,   28.4,
    3   10.0,  173.4,  142.7,   -0.5,   41.4,      4   10.0,  164.5,  122.4,    1.4,   53.1,
    5   10.0,  150.6,   98.3,    3.3,   63.1,      6   10.0,  162.1,  117.8,  -18.2,   71.3,
    7   10.0,  172.0,  139.0,  -41.8,   77.3,      8   10.0,  176.7,  155.9,  -64.1,   80.9,
    9   10.0,  176.0,  168.1,  -84.5,   82.1,     10   10.0,  170.0,  175.2, -102.3,   80.8,
   11   10.0,  158.8,  177.0, -117.0,   77.0,     12   10.0,  142.7,  173.4, -128.1,   70.9,
   13   10.0,  122.4,  164.5, -135.3,   62.6,     14   10.0,   98.3,  150.6, -138.5,   52.5,
   15   10.0,  117.8,  162.1, -152.4,   40.7,     16   10.0,  139.0,  172.0, -163.3,   27.7,
   17   10.0,  155.9,  176.7, -169.3,   13.9,     18   10.0,  168.1,  176.0, -170.1,   -0.4,
   19   10.0,  175.2,  170.0, -165.8,  -14.7,     20   10.0,  177.0,  158.8, -156.4,  -28.4,
   21   10.0,  173.4,  142.7, -142.3,  -41.4,     22   10.0,  164.5,  122.4, -123.8,  -53.1,
   23   10.0,  150.6,   98.3, -101.6,  -63.1,     24   10.0,  162.1,  117.8,  -99.6,  -71.3,
   25   10.0,  172.0,  139.0,  -97.2,  -77.3,     26   10.0,  176.7,  155.9,  -91.8,  -80.9,
   27   10.0,  176.0,  168.1,  -83.7,  -82.1,     28   10.0,  170.0,  175.2,  -73.0,  -80.8,
   29   10.0,  158.8,  177.0,  -60.0,  -77.0,     30   10.0,  142.7,  173.4,  -45.3,  -70.9,
   31   10.0,  122.4,  164.5,  -29.2,  -62.6,     32   10.0,   98.3,  150.6,  -12.2,  -52.5,
   33   10.0,  117.8,  162.1,   -9.8,  -40.7,     34   10.0,  139.0,  172.0,   -8.7,  -27.7,
   35   10.0,  155.9,  176.7,   -7.4,  -13.9,     36   10.0,  168.1,  176.0,   -5.9,    0.4,


 SOURCE ID: SFQ5F00G
  IFV    BH      BW      BL     XADJ    YADJ     IFV    BH      BW      BL     XADJ    YADJ
    1   10.0,  175.2,  170.0,  -26.6,  -14.6,      2   10.0,  177.0,  158.8,  -19.3,   -4.2,
    3   10.0,  173.4,  142.7,  -11.5,    6.3,      4   10.0,  164.5,  122.4,   -3.3,   16.6,
    5   10.0,  150.6,   98.3,    5.0,   26.4,      6   10.0,  162.1,  117.8,  -10.2,   35.4,
    7   10.0,  172.0,  139.0,  -27.7,   43.3,      8   10.0,  176.7,  155.9,  -44.3,   49.9,
    9   10.0,  176.0,  168.1,  -59.6,   55.0,     10   10.0,  170.0,  175.2,  -73.0,   58.4,
   11   10.0,  158.8,  177.0,  -84.3,   60.0,     12   10.0,  142.7,  173.4,  -93.0,   59.9,
   13   10.0,  122.4,  164.5,  -98.8,   57.9,     14   10.0,   98.3,  150.6, -101.7,   54.1,
   15   10.0,  117.8,  162.1, -116.4,   48.7,     16   10.0,  139.0,  172.0, -129.3,   41.8,
   17   10.0,  155.9,  176.7, -138.3,   33.7,     18   10.0,  168.1,  176.0, -143.0,   24.5,
   19   10.0,  175.2,  170.0, -143.4,   14.6,     20   10.0,  177.0,  158.8, -139.4,    4.2,
   21   10.0,  173.4,  142.7, -131.2,   -6.3,     22   10.0,  164.5,  122.4, -119.1,  -16.6,
   23   10.0,  150.6,   98.3, -103.3,  -26.4,     24   10.0,  162.1,  117.8, -107.6,  -35.4,
   25   10.0,  172.0,  139.0, -111.3,  -43.3,     26   10.0,  176.7,  155.9, -111.6,  -49.9,
   27   10.0,  176.0,  168.1, -108.6,  -55.0,     28   10.0,  170.0,  175.2, -102.2,  -58.4,
   29   10.0,  158.8,  177.0,  -92.7,  -60.0,     30   10.0,  142.7,  173.4,  -80.4,  -59.9,
   31   10.0,  122.4,  164.5,  -65.7,  -57.9,     32   10.0,   98.3,  150.6,  -48.9,  -54.1,
   33   10.0,  117.8,  162.1,  -45.7,  -48.7,     34   10.0,  139.0,  172.0,  -42.7,  -41.8,
   35   10.0,  155.9,  176.7,  -38.5,  -33.7,     36   10.0,  168.1,  176.0,  -33.0,  -24.5,


 SOURCE ID: SFQ5F00H
  IFV    BH      BW      BL     XADJ    YADJ     IFV    BH      BW      BL     XADJ    YADJ
    1   10.0,  175.2,  170.0,  -24.8,  -10.7,      2   10.0,  177.0,  158.8,  -18.3,   -0.1,
    3   10.0,  173.4,  142.7,  -11.2,   10.5,      4   10.0,  164.5,  122.4,   -3.7,   20.8,
    5   10.0,  150.6,   98.3,    3.8,   30.5,      6   10.0,  162.1,  117.8,  -12.0,   39.2,
```

HR Attachment A

7	10.0,	172.0,	139.0,	-30.1,	46.8,	8	10.0,	176.7,	155.9,	-47.3,	52.9,
9	10.0,	176.0,	168.1,	-63.1,	57.4,	10	10.0,	170.0,	175.2,	-76.9,	60.2,
11	10.0,	158.8,	177.0,	-88.4,	61.1,	12	10.0,	142.7,	173.4,	-97.2,	60.2,
13	10.0,	122.4,	164.5,	-103.1,	57.5,	14	10.0,	98.3,	150.6,	-105.8,	53.0,
15	10.0,	117.8,	162.1,	-120.3,	46.9,	16	10.0,	139.0,	172.0,	-132.8,	39.4,
17	10.0,	155.9,	176.7,	-141.2,	30.7,	18	10.0,	168.1,	176.0,	-145.4,	21.0,
19	10.0,	175.2,	170.0,	-145.2,	10.7,	20	10.0,	177.0,	158.8,	-140.5,	0.1,
21	10.0,	173.4,	142.7,	-131.6,	-10.5,	22	10.0,	164.5,	122.4,	-118.6,	-20.8,
23	10.0,	150.6,	98.3,	-102.1,	-30.5,	24	10.0,	162.1,	117.8,	-105.8,	-39.2,
25	10.0,	172.0,	139.0,	-108.9,	-46.8,	26	10.0,	176.7,	155.9,	-108.6,	-52.9,
27	10.0,	176.0,	168.1,	-105.1,	-57.4,	28	10.0,	170.0,	175.2,	-98.3,	-60.2,
29	10.0,	158.8,	177.0,	-88.6,	-61.1,	30	10.0,	142.7,	173.4,	-76.2,	-60.2,
31	10.0,	122.4,	164.5,	-61.5,	-57.5,	32	10.0,	98.3,	150.6,	-44.9,	-53.0,
33	10.0,	117.8,	162.1,	-41.9,	-46.9,	34	10.0,	139.0,	172.0,	-39.3,	-39.4,
35	10.0,	155.9,	176.7,	-35.5,	-30.7,	36	10.0,	168.1,	176.0,	-30.6,	-21.0,

SOURCE ID: SFQ5F00I

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-21.7,	-7.3,	2	10.0,	177.0,	158.8,	-15.8,	3.8,
3	10.0,	173.4,	142.7,	-9.4,	14.8,	4	10.0,	164.5,	122.4,	-2.7,	25.3,
5	10.0,	150.6,	98.3,	4.1,	35.1,	6	10.0,	162.1,	117.8,	-12.6,	43.8,
7	10.0,	172.0,	139.0,	-31.5,	51.2,	8	10.0,	176.7,	155.9,	-49.4,	57.0,
9	10.0,	176.0,	168.1,	-65.9,	61.1,	10	10.0,	170.0,	175.2,	-80.3,	63.3,
11	10.0,	158.8,	177.0,	-92.3,	63.6,	12	10.0,	142.7,	173.4,	-101.5,	62.0,
13	10.0,	122.4,	164.5,	-107.6,	58.5,	14	10.0,	98.3,	150.6,	-110.4,	53.2,
15	10.0,	117.8,	162.1,	-124.9,	46.3,	16	10.0,	139.0,	172.0,	-137.2,	38.0,
17	10.0,	155.9,	176.7,	-145.4,	28.5,	18	10.0,	168.1,	176.0,	-149.1,	18.2,
19	10.0,	175.2,	170.0,	-148.3,	7.3,	20	10.0,	177.0,	158.8,	-143.0,	-3.8,
21	10.0,	173.4,	142.7,	-133.4,	-14.8,	22	10.0,	164.5,	122.4,	-119.7,	-25.3,
23	10.0,	150.6,	98.3,	-102.3,	-35.1,	24	10.0,	162.1,	117.8,	-105.2,	-43.8,
25	10.0,	172.0,	139.0,	-107.5,	-51.2,	26	10.0,	176.7,	155.9,	-106.5,	-57.0,
27	10.0,	176.0,	168.1,	-102.3,	-61.1,	28	10.0,	170.0,	175.2,	-94.9,	-63.3,
29	10.0,	158.8,	177.0,	-84.7,	-63.6,	30	10.0,	142.7,	173.4,	-71.9,	-62.0,
31	10.0,	122.4,	164.5,	-56.9,	-58.5,	32	10.0,	98.3,	150.6,	-40.2,	-53.2,
33	10.0,	117.8,	162.1,	-37.3,	-46.3,	34	10.0,	139.0,	172.0,	-34.8,	-38.0,
35	10.0,	155.9,	176.7,	-31.4,	-28.5,	36	10.0,	168.1,	176.0,	-26.9,	-18.2,

*** AERMOD - VERSION 15181 *** *** PM10 exhaust only Tier IV ***
05/08/16
*** AERMET - VERSION 14134 *** *** ***
16:58:03

PAGE 10
**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: SFQ5F00J

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-18.4,	-3.2,	2	10.0,	177.0,	158.8,	-13.3,	8.4,
3	10.0,	173.4,	142.7,	-7.7,	19.8,	4	10.0,	164.5,	122.4,	-1.9,	30.5,
5	10.0,	150.6,	98.3,	3.9,	40.3,	6	10.0,	162.1,	117.8,	-13.7,	48.9,
7	10.0,	172.0,	139.0,	-33.5,	56.0,	8	10.0,	176.7,	155.9,	-52.2,	61.4,
9	10.0,	176.0,	168.1,	-69.4,	65.0,	10	10.0,	170.0,	175.2,	-84.4,	66.6,
11	10.0,	158.8,	177.0,	-96.9,	66.1,	12	10.0,	142.7,	173.4,	-106.5,	63.6,
13	10.0,	122.4,	164.5,	-112.8,	59.2,	14	10.0,	98.3,	150.6,	-115.7,	53.0,
15	10.0,	117.8,	162.1,	-130.0,	45.2,	16	10.0,	139.0,	172.0,	-142.1,	36.0,
17	10.0,	155.9,	176.7,	-149.8,	25.8,	18	10.0,	168.1,	176.0,	-153.0,	14.7,
19	10.0,	175.2,	170.0,	-151.5,	3.2,	20	10.0,	177.0,	158.8,	-145.5,	-8.4,
21	10.0,	173.4,	142.7,	-135.0,	-19.8,	22	10.0,	164.5,	122.4,	-120.4,	-30.5,
23	10.0,	150.6,	98.3,	-102.2,	-40.3,	24	10.0,	162.1,	117.8,	-104.1,	-48.9,
25	10.0,	172.0,	139.0,	-105.5,	-56.0,	26	10.0,	176.7,	155.9,	-103.7,	-61.4,
27	10.0,	176.0,	168.1,	-98.8,	-65.0,	28	10.0,	170.0,	175.2,	-90.8,	-66.6,
29	10.0,	158.8,	177.0,	-80.1,	-66.1,	30	10.0,	142.7,	173.4,	-66.9,	-63.6,
31	10.0,	122.4,	164.5,	-51.7,	-59.2,	32	10.0,	98.3,	150.6,	-35.0,	-53.0,

33	10.0,	117.8,	162.1,	-32.1,	-45.2,	34	10.0,	139.0,	172.0,	-30.0,	-36.0,
35	10.0,	155.9,	176.7,	-26.9,	-25.8,	36	10.0,	168.1,	176.0,	-23.0,	-14.7,

SOURCE ID: SFQ5F00K

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-15.2,	1.2,	2	10.0,	177.0,	158.8,	-10.9,	13.3,
3	10.0,	173.4,	142.7,	-6.3,	25.0,	4	10.0,	164.5,	122.4,	-1.4,	35.9,
5	10.0,	150.6,	98.3,	3.5,	45.8,	6	10.0,	162.1,	117.8,	-15.0,	54.2,
7	10.0,	172.0,	139.0,	-35.7,	61.0,	8	10.0,	176.7,	155.9,	-55.3,	66.0,
9	10.0,	176.0,	168.1,	-73.2,	68.9,	10	10.0,	170.0,	175.2,	-88.8,	69.7,
11	10.0,	158.8,	177.0,	-101.8,	68.5,	12	10.0,	142.7,	173.4,	-111.7,	65.1,
13	10.0,	122.4,	164.5,	-118.2,	59.8,	14	10.0,	98.3,	150.6,	-121.1,	52.6,
15	10.0,	117.8,	162.1,	-135.3,	43.9,	16	10.0,	139.0,	172.0,	-147.0,	33.8,
17	10.0,	155.9,	176.7,	-154.3,	22.7,	18	10.0,	168.1,	176.0,	-156.9,	10.9,
19	10.0,	175.2,	170.0,	-154.7,	-1.2,	20	10.0,	177.0,	158.8,	-147.9,	-13.3,
21	10.0,	173.4,	142.7,	-136.5,	-25.0,	22	10.0,	164.5,	122.4,	-121.0,	-35.9,
23	10.0,	150.6,	98.3,	-101.8,	-45.8,	24	10.0,	162.1,	117.8,	-102.8,	-54.2,
25	10.0,	172.0,	139.0,	-103.3,	-61.0,	26	10.0,	176.7,	155.9,	-100.7,	-66.0,
27	10.0,	176.0,	168.1,	-95.0,	-68.9,	28	10.0,	170.0,	175.2,	-86.4,	-69.7,
29	10.0,	158.8,	177.0,	-75.2,	-68.5,	30	10.0,	142.7,	173.4,	-61.7,	-65.1,
31	10.0,	122.4,	164.5,	-46.3,	-59.8,	32	10.0,	98.3,	150.6,	-29.6,	-52.6,
33	10.0,	117.8,	162.1,	-26.9,	-43.9,	34	10.0,	139.0,	172.0,	-25.0,	-33.8,
35	10.0,	155.9,	176.7,	-22.4,	-22.7,	36	10.0,	168.1,	176.0,	-19.1,	-10.9,

SOURCE ID: SFQ5F00L

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-12.3,	4.6,	2	10.0,	177.0,	158.8,	-8.6,	17.2,
3	10.0,	173.4,	142.7,	-4.6,	29.2,	4	10.0,	164.5,	122.4,	-0.5,	40.3,
5	10.0,	150.6,	98.3,	3.6,	50.2,	6	10.0,	162.1,	117.8,	-15.7,	58.6,
7	10.0,	172.0,	139.0,	-37.1,	65.2,	8	10.0,	176.7,	155.9,	-57.4,	69.9,
9	10.0,	176.0,	168.1,	-76.0,	72.4,	10	10.0,	170.0,	175.2,	-92.2,	72.7,
11	10.0,	158.8,	177.0,	-105.6,	70.8,	12	10.0,	142.7,	173.4,	-115.9,	66.7,
13	10.0,	122.4,	164.5,	-122.6,	60.7,	14	10.0,	98.3,	150.6,	-125.6,	52.7,
15	10.0,	117.8,	162.1,	-139.7,	43.2,	16	10.0,	139.0,	172.0,	-151.3,	32.4,
17	10.0,	155.9,	176.7,	-158.2,	20.6,	18	10.0,	168.1,	176.0,	-160.4,	8.1,
19	10.0,	175.2,	170.0,	-157.7,	-4.6,	20	10.0,	177.0,	158.8,	-150.2,	-17.2,
21	10.0,	173.4,	142.7,	-138.1,	-29.2,	22	10.0,	164.5,	122.4,	-121.8,	-40.3,
23	10.0,	150.6,	98.3,	-101.9,	-50.2,	24	10.0,	162.1,	117.8,	-102.1,	-58.6,
25	10.0,	172.0,	139.0,	-101.9,	-65.2,	26	10.0,	176.7,	155.9,	-98.5,	-69.9,
27	10.0,	176.0,	168.1,	-92.2,	-72.4,	28	10.0,	170.0,	175.2,	-83.0,	-72.7,
29	10.0,	158.8,	177.0,	-71.3,	-70.8,	30	10.0,	142.7,	173.4,	-57.5,	-66.7,
31	10.0,	122.4,	164.5,	-41.9,	-60.7,	32	10.0,	98.3,	150.6,	-25.1,	-52.7,
33	10.0,	117.8,	162.1,	-22.4,	-43.2,	34	10.0,	139.0,	172.0,	-20.8,	-32.4,
35	10.0,	155.9,	176.7,	-18.5,	-20.6,	36	10.0,	168.1,	176.0,	-15.6,	-8.1,

SOURCE ID: SFQ5F00M

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-8.8,	7.2,	2	10.0,	177.0,	158.8,	-5.6,	20.4,
3	10.0,	173.4,	142.7,	-2.2,	32.9,	4	10.0,	164.5,	122.4,	1.2,	44.4,
5	10.0,	150.6,	98.3,	4.6,	54.5,	6	10.0,	162.1,	117.8,	-15.5,	63.0,
7	10.0,	172.0,	139.0,	-37.7,	69.6,	8	10.0,	176.7,	155.9,	-58.7,	74.1,
9	10.0,	176.0,	168.1,	-78.0,	76.3,	10	10.0,	170.0,	175.2,	-94.9,	76.2,
11	10.0,	158.8,	177.0,	-108.9,	73.8,	12	10.0,	142.7,	173.4,	-119.6,	69.1,
13	10.0,	122.4,	164.5,	-126.6,	62.4,	14	10.0,	98.3,	150.6,	-129.8,	53.7,
15	10.0,	117.8,	162.1,	-144.1,	43.4,	16	10.0,	139.0,	172.0,	-155.6,	31.8,
17	10.0,	155.9,	176.7,	-162.4,	19.2,	18	10.0,	168.1,	176.0,	-164.3,	6.1,
19	10.0,	175.2,	170.0,	-161.2,	-7.2,	20	10.0,	177.0,	158.8,	-153.2,	-20.4,
21	10.0,	173.4,	142.7,	-140.5,	-32.9,	22	10.0,	164.5,	122.4,	-123.5,	-44.4,
23	10.0,	150.6,	98.3,	-102.8,	-54.5,	24	10.0,	162.1,	117.8,	-102.3,	-63.0,
25	10.0,	172.0,	139.0,	-101.3,	-69.6,	26	10.0,	176.7,	155.9,	-97.2,	-74.1,
27	10.0,	176.0,	168.1,	-90.2,	-76.3,	28	10.0,	170.0,	175.2,	-80.4,	-76.2,
29	10.0,	158.8,	177.0,	-68.1,	-73.8,	30	10.0,	142.7,	173.4,	-53.8,	-69.1,
31	10.0,	122.4,	164.5,	-37.9,	-62.4,	32	10.0,	98.3,	150.6,	-20.8,	-53.7,
33	10.0,	117.8,	162.1,	-18.1,	-43.4,	34	10.0,	139.0,	172.0,	-16.4,	-31.8,

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  35   10.0,  155.9,  176.7,  -14.3,  -19.2,     36   10.0,  168.1,  176.0,  -11.7,   -6.1,

 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                    ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                              ***
  16:58:03

  PAGE  11
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                        *** DIRECTION SPECIFIC BUILDING DIMENSIONS ***


 SOURCE ID: SFQ5F00N
  IFV    BH      BW      BL     XADJ    YADJ     IFV    BH      BW      BL     XADJ    YADJ
    1   10.0,  175.2,  170.0,   -6.4,   10.7,      2   10.0,  177.0,  158.8,   -3.8,   24.2,
    3   10.0,  173.4,  142.7,   -1.2,   37.0,      4   10.0,  164.5,  122.4,    1.6,   48.6,
    5   10.0,  150.6,   98.3,    4.2,   58.8,      6   10.0,  162.1,  117.8,  -16.6,   67.1,
    7   10.0,  172.0,  139.0,  -39.5,   73.5,      8   10.0,  176.7,  155.9,  -61.1,   77.5,
    9   10.0,  176.0,  168.1,  -81.0,   79.3,     10   10.0,  170.0,  175.2,  -98.3,   78.6,
   11   10.0,  158.8,  177.0, -112.7,   75.6,     12   10.0,  142.7,  173.4, -123.7,   70.2,
   13   10.0,  122.4,  164.5, -130.9,   62.7,     14   10.0,   98.3,  150.6, -134.1,   53.3,
   15   10.0,  117.8,  162.1, -148.2,   42.3,     16   10.0,  139.0,  172.0, -159.5,   30.0,
   17   10.0,  155.9,  176.7, -165.9,   16.8,     18   10.0,  168.1,  176.0, -167.3,    3.1,
   19   10.0,  175.2,  170.0, -163.6,  -10.7,     20   10.0,  177.0,  158.8, -155.0,  -24.2,
   21   10.0,  173.4,  142.7, -141.6,  -37.0,     22   10.0,  164.5,  122.4, -123.9,  -48.6,
   23   10.0,  150.6,   98.3, -102.5,  -58.8,     24   10.0,  162.1,  117.8, -101.2,  -67.1,
   25   10.0,  172.0,  139.0,  -99.5,  -73.5,     26   10.0,  176.7,  155.9,  -94.8,  -77.5,
   27   10.0,  176.0,  168.1,  -87.2,  -79.3,     28   10.0,  170.0,  175.2,  -76.9,  -78.6,
   29   10.0,  158.8,  177.0,  -64.3,  -75.6,     30   10.0,  142.7,  173.4,  -49.7,  -70.2,
   31   10.0,  122.4,  164.5,  -33.7,  -62.7,     32   10.0,   98.3,  150.6,  -16.6,  -53.3,
   33   10.0,  117.8,  162.1,  -14.0,  -42.3,     34   10.0,  139.0,  172.0,  -12.6,  -30.0,
   35   10.0,  155.9,  176.7,  -10.8,  -16.8,     36   10.0,  168.1,  176.0,   -8.7,   -3.1,


 SOURCE ID: SFQ5F00O
  IFV    BH      BW      BL     XADJ    YADJ     IFV    BH      BW      BL     XADJ    YADJ
    1   10.0,  175.2,  170.0,   -0.1,   19.2,      2   10.0,  177.0,  158.8,    0.9,   33.7,
    3   10.0,  173.4,  142.7,    1.9,   47.1,      4   10.0,  164.5,  122.4,    2.8,   59.1,
    5   10.0,  150.6,   98.3,    3.6,   69.3,      6   10.0,  162.1,  117.8,  -19.1,   77.4,
    7   10.0,  172.0,  139.0,  -43.7,   83.2,      8   10.0,  176.7,  155.9,  -67.0,   86.4,
    9   10.0,  176.0,  168.1,  -88.3,   87.0,     10   10.0,  170.0,  175.2, -106.9,   84.9,
   11   10.0,  158.8,  177.0, -122.2,   80.3,     12   10.0,  142.7,  173.4, -133.8,   73.2,
   13   10.0,  122.4,  164.5, -141.4,   63.9,     14   10.0,   98.3,  150.6, -144.7,   52.7,
   15   10.0,  117.8,  162.1, -158.5,   39.9,     16   10.0,  139.0,  172.0, -169.2,   25.8,
   17   10.0,  155.9,  176.7, -174.8,   11.0,     18   10.0,  168.1,  176.0, -175.0,   -4.2,
   19   10.0,  175.2,  170.0, -169.9,  -19.2,     20   10.0,  177.0,  158.8, -159.7,  -33.7,
   21   10.0,  173.4,  142.7, -144.6,  -47.1,     22   10.0,  164.5,  122.4, -125.1,  -59.1,
   23   10.0,  150.6,   98.3, -101.8,  -69.3,     24   10.0,  162.1,  117.8,  -98.8,  -77.4,
   25   10.0,  172.0,  139.0,  -95.3,  -83.2,     26   10.0,  176.7,  155.9,  -88.9,  -86.4,
   27   10.0,  176.0,  168.1,  -79.9,  -87.0,     28   10.0,  170.0,  175.2,  -68.4,  -84.9,
   29   10.0,  158.8,  177.0,  -54.8,  -80.3,     30   10.0,  142.7,  173.4,  -39.6,  -73.2,
   31   10.0,  122.4,  164.5,  -23.1,  -63.9,     32   10.0,   98.3,  150.6,   -6.0,  -52.7,
   33   10.0,  117.8,  162.1,   -3.6,  -39.9,     34   10.0,  139.0,  172.0,   -2.8,  -25.8,
   35   10.0,  155.9,  176.7,   -2.0,  -11.0,     36   10.0,  168.1,  176.0,   -1.0,    4.2,


 SOURCE ID: SFQ5F00P
  IFV    BH      BW      BL     XADJ    YADJ     IFV    BH      BW      BL     XADJ    YADJ
    1   10.0,  175.2,  170.0,  -50.1,  -38.2,      2   10.0,  177.0,  158.8,  -38.4,  -31.6,
    3   10.0,  173.4,  142.7,  -25.5,  -24.0,      4   10.0,  164.5,  122.4,  -11.9,  -15.7,
    5   10.0,  150.6,   98.3,    2.1,   -6.9,      6   10.0,  162.1,  117.8,   -7.2,    2.1,
    7   10.0,  172.0,  139.0,  -19.0,   11.1,      8   10.0,  176.7,  155.9,  -30.1,   19.7,
    9   10.0,  176.0,  168.1,  -40.4,   27.7,     10   10.0,  170.0,  175.2,  -49.4,   34.9,
   11   10.0,  158.8,  177.0,  -56.9,   41.0,     12   10.0,  142.7,  173.4,  -62.7,   45.8,
   13   10.0,  122.4,  164.5,  -66.6,   49.3,     14   10.0,   98.3,  150.6,  -68.4,   51.3,
   15   10.0,  117.8,  162.1,  -83.2,   51.7,     16   10.0,  139.0,  172.0,  -97.1,   50.5,
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17	10.0,	155.9,	176.7,	-108.0,	47.8,	18	10.0,	168.1,	176.0,	-115.7,	43.7,
19	10.0,	175.2,	170.0,	-119.8,	38.2,	20	10.0,	177.0,	158.8,	-120.3,	31.6,
21	10.0,	173.4,	142.7,	-117.2,	24.0,	22	10.0,	164.5,	122.4,	-110.5,	15.7,
23	10.0,	150.6,	98.3,	-100.4,	6.9,	24	10.0,	162.1,	117.8,	-110.6,	-2.1,
25	10.0,	172.0,	139.0,	-120.0,	-11.1,	26	10.0,	176.7,	155.9,	-125.8,	-19.7,
27	10.0,	176.0,	168.1,	-127.8,	-27.7,	28	10.0,	170.0,	175.2,	-125.8,	-34.9,
29	10.0,	158.8,	177.0,	-120.1,	-41.0,	30	10.0,	142.7,	173.4,	-110.7,	-45.8,
31	10.0,	122.4,	164.5,	-97.9,	-49.3,	32	10.0,	98.3,	150.6,	-82.2,	-51.3,
33	10.0,	117.8,	162.1,	-78.9,	-51.7,	34	10.0,	139.0,	172.0,	-75.0,	-50.5,
35	10.0,	155.9,	176.7,	-68.7,	-47.8,	36	10.0,	168.1,	176.0,	-60.3,	-43.7,

SOURCE ID: SFQ5F00Q

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	2.5,	16.2,	2	10.0,	177.0,	158.8,	4.0,	31.2,
3	10.0,	173.4,	142.7,	5.3,	45.2,	4	10.0,	164.5,	122.4,	6.5,	57.8,
5	10.0,	150.6,	98.3,	7.5,	68.7,	6	10.0,	162.1,	117.8,	-15.1,	77.5,
7	10.0,	172.0,	139.0,	-39.8,	83.9,	8	10.0,	176.7,	155.9,	-63.3,	87.8,
9	10.0,	176.0,	168.1,	-84.9,	89.0,	10	10.0,	170.0,	175.2,	-103.9,	87.5,
11	10.0,	158.8,	177.0,	-119.7,	83.3,	12	0.0,	0.0,	0.0,	0.0,	0.0,
13	0.0,	0.0,	0.0,	0.0,	0.0,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-158.5,	43.8,	16	10.0,	139.0,	172.0,	-169.9,	29.7,
17	10.0,	155.9,	176.7,	-176.1,	14.7,	18	10.0,	168.1,	176.0,	-177.0,	-0.8,
19	10.0,	175.2,	170.0,	-172.5,	-16.2,	20	10.0,	177.0,	158.8,	-162.7,	-31.2,
21	10.0,	173.4,	142.7,	-148.0,	-45.2,	22	10.0,	164.5,	122.4,	-128.8,	-57.8,
23	10.0,	150.6,	98.3,	-105.7,	-68.7,	24	10.0,	162.1,	117.8,	-102.7,	-77.5,
25	10.0,	172.0,	139.0,	-99.2,	-83.9,	26	10.0,	176.7,	155.9,	-92.6,	-87.8,
27	10.0,	176.0,	168.1,	-83.3,	-89.0,	28	10.0,	170.0,	175.2,	-71.4,	-87.5,
29	10.0,	158.8,	177.0,	-57.3,	-83.3,	30	0.0,	0.0,	0.0,	0.0,	0.0,
31	0.0,	0.0,	0.0,	0.0,	0.0,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-3.6,	-43.8,	34	10.0,	139.0,	172.0,	-2.1,	-29.7,
35	10.0,	155.9,	176.7,	-0.6,	-14.7,	36	10.0,	168.1,	176.0,	1.0,	0.8,

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: SFQ5F00R

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-0.6,	10.9,	2	10.0,	177.0,	158.8,	1.8,	25.4,
3	10.0,	173.4,	142.7,	4.2,	39.1,	4	10.0,	164.5,	122.4,	6.4,	51.6,
5	10.0,	150.6,	98.3,	8.5,	62.6,	6	10.0,	162.1,	117.8,	-13.0,	71.6,
7	10.0,	172.0,	139.0,	-36.8,	78.5,	8	10.0,	176.7,	155.9,	-59.4,	83.0,
9	10.0,	176.0,	168.1,	-80.2,	85.0,	10	10.0,	170.0,	175.2,	-98.5,	84.4,
11	10.0,	158.8,	177.0,	-113.9,	81.2,	12	10.0,	142.7,	173.4,	-125.8,	75.5,
13	0.0,	0.0,	0.0,	0.0,	0.0,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-152.7,	45.9,	16	10.0,	139.0,	172.0,	-164.6,	32.7,
17	10.0,	155.9,	176.7,	-171.4,	18.6,	18	10.0,	168.1,	176.0,	-173.0,	3.9,
19	10.0,	175.2,	170.0,	-169.4,	-10.9,	20	10.0,	177.0,	158.8,	-160.6,	-25.4,
21	10.0,	173.4,	142.7,	-146.9,	-39.1,	22	10.0,	164.5,	122.4,	-128.8,	-51.6,
23	10.0,	150.6,	98.3,	-106.8,	-62.6,	24	10.0,	162.1,	117.8,	-104.8,	-71.6,
25	10.0,	172.0,	139.0,	-102.2,	-78.5,	26	10.0,	176.7,	155.9,	-96.6,	-83.0,
27	10.0,	176.0,	168.1,	-88.0,	-85.0,	28	10.0,	170.0,	175.2,	-76.7,	-84.4,
29	10.0,	158.8,	177.0,	-63.1,	-81.2,	30	10.0,	142.7,	173.4,	-47.6,	-75.5,
31	0.0,	0.0,	0.0,	0.0,	0.0,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-9.4,	-45.9,	34	10.0,	139.0,	172.0,	-7.5,	-32.7,
35	10.0,	155.9,	176.7,	-5.3,	-18.6,	36	10.0,	168.1,	176.0,	-3.0,	-3.9,

SOURCE ID: SFQ5F00S

HR Attachment A

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-8.3,	3.7,	2	10.0,	177.0,	158.8,	-4.5,	16.9,
3	10.0,	173.4,	142.7,	-0.5,	29.7,	4	10.0,	164.5,	122.4,	3.4,	41.5,
5	10.0,	150.6,	98.3,	7.3,	52.1,	6	10.0,	162.1,	117.8,	-12.4,	61.1,
7	10.0,	172.0,	139.0,	-34.3,	68.3,	8	10.0,	176.7,	155.9,	-55.2,	73.3,
9	10.0,	176.0,	168.1,	-74.4,	76.2,	10	10.0,	170.0,	175.2,	-91.3,	76.7,
11	10.0,	158.8,	177.0,	-105.4,	74.9,	12	10.0,	142.7,	173.4,	-116.4,	70.8,
13	10.0,	122.4,	164.5,	-123.8,	64.6,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-142.2,	46.5,	16	10.0,	139.0,	172.0,	-154.3,	35.2,
17	10.0,	155.9,	176.7,	-161.7,	22.8,	18	10.0,	168.1,	176.0,	-164.2,	9.7,
19	10.0,	175.2,	170.0,	-161.7,	-3.7,	20	10.0,	177.0,	158.8,	-154.3,	-16.9,
21	10.0,	173.4,	142.7,	-142.2,	-29.7,	22	10.0,	164.5,	122.4,	-125.8,	-41.5,
23	10.0,	150.6,	98.3,	-105.5,	-52.1,	24	10.0,	162.1,	117.8,	-105.4,	-61.1,
25	10.0,	172.0,	139.0,	-104.7,	-68.3,	26	10.0,	176.7,	155.9,	-100.8,	-73.3,
27	10.0,	176.0,	168.1,	-93.8,	-76.2,	28	10.0,	170.0,	175.2,	-83.9,	-76.7,
29	10.0,	158.8,	177.0,	-71.6,	-74.9,	30	10.0,	142.7,	173.4,	-57.0,	-70.8,
31	10.0,	122.4,	164.5,	-40.7,	-64.6,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-19.9,	-46.5,	34	10.0,	139.0,	172.0,	-17.7,	-35.2,
35	10.0,	155.9,	176.7,	-15.0,	-22.8,	36	10.0,	168.1,	176.0,	-11.8,	-9.7,

SOURCE ID: SFQ5F00T

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-12.8,	-1.5,	2	10.0,	177.0,	158.8,	-8.1,	11.1,
3	10.0,	173.4,	142.7,	-3.1,	23.3,	4	10.0,	164.5,	122.4,	2.0,	34.8,
5	10.0,	150.6,	98.3,	7.1,	45.2,	6	10.0,	162.1,	117.8,	-11.4,	54.3,
7	10.0,	172.0,	139.0,	-32.1,	61.7,	8	10.0,	176.7,	155.9,	-51.9,	67.3,
9	10.0,	176.0,	168.1,	-70.1,	70.8,	10	10.0,	170.0,	175.2,	-86.1,	72.1,
11	10.0,	158.8,	177.0,	-99.6,	71.3,	12	10.0,	142.7,	173.4,	-110.0,	68.3,
13	10.0,	122.4,	164.5,	-117.0,	63.2,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-135.4,	47.5,	16	10.0,	139.0,	172.0,	-147.8,	37.4,
17	10.0,	155.9,	176.7,	-155.6,	26.1,	18	10.0,	168.1,	176.0,	-158.8,	14.0,
19	10.0,	175.2,	170.0,	-157.1,	1.5,	20	10.0,	177.0,	158.8,	-150.7,	-11.1,
21	10.0,	173.4,	142.7,	-139.7,	-23.3,	22	10.0,	164.5,	122.4,	-124.4,	-34.8,
23	10.0,	150.6,	98.3,	-105.4,	-45.2,	24	10.0,	162.1,	117.8,	-106.4,	-54.3,
25	10.0,	172.0,	139.0,	-106.9,	-61.7,	26	10.0,	176.7,	155.9,	-104.0,	-67.3,
27	10.0,	176.0,	168.1,	-98.1,	-70.8,	28	10.0,	170.0,	175.2,	-89.1,	-72.1,
29	10.0,	158.8,	177.0,	-77.5,	-71.3,	30	10.0,	142.7,	173.4,	-63.4,	-68.3,
31	10.0,	122.4,	164.5,	-47.5,	-63.2,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-26.8,	-47.5,	34	10.0,	139.0,	172.0,	-24.3,	-37.4,
35	10.0,	155.9,	176.7,	-21.1,	-26.1,	36	10.0,	168.1,	176.0,	-17.2,	-14.0,

SOURCE ID: SFQ5F00U

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-18.1,	-6.3,	2	10.0,	177.0,	158.8,	-12.4,	5.4,
3	10.0,	173.4,	142.7,	-6.4,	17.0,	4	10.0,	164.5,	122.4,	-0.1,	28.0,
5	10.0,	150.6,	98.3,	6.1,	38.2,	6	10.0,	162.1,	117.8,	-11.1,	47.2,
7	10.0,	172.0,	139.0,	-30.6,	54.8,	8	10.0,	176.7,	155.9,	-49.2,	60.7,
9	10.0,	176.0,	168.1,	-66.3,	64.8,	10	10.0,	170.0,	175.2,	-81.3,	66.9,
11	10.0,	158.8,	177.0,	-93.9,	67.0,	12	10.0,	142.7,	173.4,	-103.7,	65.0,
13	10.0,	122.4,	164.5,	-110.3,	61.1,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-128.3,	47.8,	16	10.0,	139.0,	172.0,	-140.8,	38.9,
17	10.0,	155.9,	176.7,	-149.1,	28.8,	18	10.0,	168.1,	176.0,	-152.8,	17.8,
19	10.0,	175.2,	170.0,	-151.9,	6.3,	20	10.0,	177.0,	158.8,	-146.4,	-5.4,
21	10.0,	173.4,	142.7,	-136.4,	-17.0,	22	10.0,	164.5,	122.4,	-122.3,	-28.0,
23	10.0,	150.6,	98.3,	-104.4,	-38.2,	24	10.0,	162.1,	117.8,	-106.7,	-47.2,
25	10.0,	172.0,	139.0,	-108.4,	-54.8,	26	10.0,	176.7,	155.9,	-106.8,	-60.7,
27	10.0,	176.0,	168.1,	-101.9,	-64.8,	28	10.0,	170.0,	175.2,	-93.9,	-66.9,
29	10.0,	158.8,	177.0,	-83.1,	-67.0,	30	10.0,	142.7,	173.4,	-69.7,	-65.0,
31	10.0,	122.4,	164.5,	-54.2,	-61.1,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-33.9,	-47.8,	34	10.0,	139.0,	172.0,	-31.2,	-38.9,
35	10.0,	155.9,	176.7,	-27.6,	-28.8,	36	10.0,	168.1,	176.0,	-23.2,	-17.8,

HR Attachment A

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**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: SFQ5F00V

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-22.3,	-11.8,	2	10.0,	177.0,	158.8,	-15.6,	-0.7,
3	10.0,	173.4,	142.7,	-8.4,	10.4,	4	10.0,	164.5,	122.4,	-1.0,	21.1,
5	10.0,	150.6,	98.3,	6.5,	31.3,	6	10.0,	162.1,	117.8,	-9.6,	40.4,
7	10.0,	172.0,	139.0,	-27.9,	48.4,	8	10.0,	176.7,	155.9,	-45.4,	54.9,
9	10.0,	176.0,	168.1,	-61.6,	59.7,	10	10.0,	170.0,	175.2,	-75.8,	62.7,
11	10.0,	158.8,	177.0,	-87.8,	63.8,	12	10.0,	142.7,	173.4,	-97.1,	62.9,
13	10.0,	122.4,	164.5,	-103.4,	60.2,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-121.5,	49.3,	16	10.0,	139.0,	172.0,	-134.4,	41.6,
17	10.0,	155.9,	176.7,	-143.2,	32.5,	18	10.0,	168.1,	176.0,	-147.7,	22.5,
19	10.0,	175.2,	170.0,	-147.7,	11.8,	20	10.0,	177.0,	158.8,	-143.2,	0.7,
21	10.0,	173.4,	142.7,	-134.3,	-10.4,	22	10.0,	164.5,	122.4,	-121.4,	-21.1,
23	10.0,	150.6,	98.3,	-104.8,	-31.3,	24	10.0,	162.1,	117.8,	-108.2,	-40.4,
25	10.0,	172.0,	139.0,	-111.1,	-48.4,	26	10.0,	176.7,	155.9,	-110.5,	-54.9,
27	10.0,	176.0,	168.1,	-106.6,	-59.7,	28	10.0,	170.0,	175.2,	-99.4,	-62.7,
29	10.0,	158.8,	177.0,	-89.2,	-63.8,	30	10.0,	142.7,	173.4,	-76.3,	-62.9,
31	10.0,	122.4,	164.5,	-61.1,	-60.2,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-40.6,	-49.3,	34	10.0,	139.0,	172.0,	-37.6,	-41.6,
35	10.0,	155.9,	176.7,	-33.5,	-32.5,	36	10.0,	168.1,	176.0,	-28.3,	-22.5,

SOURCE ID: SFQ5F00W

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-28.6,	-18.7,	2	10.0,	177.0,	158.8,	-20.6,	-8.6,
3	10.0,	173.4,	142.7,	-12.0,	1.7,	4	10.0,	164.5,	122.4,	-3.0,	12.0,
5	10.0,	150.6,	98.3,	6.1,	21.9,	6	10.0,	162.1,	117.8,	-8.4,	31.2,
7	10.0,	172.0,	139.0,	-25.1,	39.5,	8	10.0,	176.7,	155.9,	-41.1,	46.6,
9	10.0,	176.0,	168.1,	-55.9,	52.3,	10	10.0,	170.0,	175.2,	-68.9,	56.4,
11	10.0,	158.8,	177.0,	-79.9,	58.8,	12	10.0,	142.7,	173.4,	-88.4,	59.4,
13	10.0,	122.4,	164.5,	-94.3,	58.2,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-112.2,	50.6,	16	10.0,	139.0,	172.0,	-125.5,	44.4,
17	10.0,	155.9,	176.7,	-135.0,	36.8,	18	10.0,	168.1,	176.0,	-140.3,	28.2,
19	10.0,	175.2,	170.0,	-141.4,	18.7,	20	10.0,	177.0,	158.8,	-138.2,	8.6,
21	10.0,	173.4,	142.7,	-130.8,	-1.7,	22	10.0,	164.5,	122.4,	-119.4,	-12.0,
23	10.0,	150.6,	98.3,	-104.3,	-21.9,	24	10.0,	162.1,	117.8,	-109.5,	-31.2,
25	10.0,	172.0,	139.0,	-113.9,	-39.5,	26	10.0,	176.7,	155.9,	-114.8,	-46.6,
27	10.0,	176.0,	168.1,	-112.3,	-52.3,	28	10.0,	170.0,	175.2,	-106.3,	-56.4,
29	10.0,	158.8,	177.0,	-97.1,	-58.8,	30	10.0,	142.7,	173.4,	-85.0,	-59.4,
31	10.0,	122.4,	164.5,	-70.2,	-58.2,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-49.9,	-50.6,	34	10.0,	139.0,	172.0,	-46.5,	-44.4,
35	10.0,	155.9,	176.7,	-41.8,	-36.8,	36	10.0,	168.1,	176.0,	-35.7,	-28.2,

SOURCE ID: SFQ5F00X

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-32.4,	-23.1,	2	10.0,	177.0,	158.8,	-23.6,	-13.6,
3	10.0,	173.4,	142.7,	-14.0,	-3.7,	4	10.0,	164.5,	122.4,	-4.1,	6.3,
5	10.0,	150.6,	98.3,	6.0,	16.1,	6	10.0,	162.1,	117.8,	-7.4,	25.4,
7	10.0,	172.0,	139.0,	-23.2,	34.0,	8	10.0,	176.7,	155.9,	-38.2,	41.5,
9	10.0,	176.0,	168.1,	-52.2,	47.8,	10	10.0,	170.0,	175.2,	-64.5,	52.6,
11	10.0,	158.8,	177.0,	-74.9,	55.8,	12	10.0,	142.7,	173.4,	-83.0,	57.3,
13	10.0,	122.4,	164.5,	-88.5,	57.1,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-106.5,	51.5,	16	10.0,	139.0,	172.0,	-120.0,	46.3,
17	10.0,	155.9,	176.7,	-129.9,	39.7,	18	10.0,	168.1,	176.0,	-135.8,	31.9,
19	10.0,	175.2,	170.0,	-137.6,	23.1,	20	10.0,	177.0,	158.8,	-135.2,	13.6,
21	10.0,	173.4,	142.7,	-128.7,	3.7,	22	10.0,	164.5,	122.4,	-118.3,	-6.3,
23	10.0,	150.6,	98.3,	-104.3,	-16.1,	24	10.0,	162.1,	117.8,	-110.4,	-25.4,
25	10.0,	172.0,	139.0,	-115.8,	-34.0,	26	10.0,	176.7,	155.9,	-117.7,	-41.5,

27	10.0,	176.0,	168.1,	-116.0,	-47.8,	28	10.0,	170.0,	175.2,	-110.7,	-52.6,
29	10.0,	158.8,	177.0,	-102.1,	-55.8,	30	10.0,	142.7,	173.4,	-90.4,	-57.3,
31	10.0,	122.4,	164.5,	-76.0,	-57.1,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-55.6,	-51.5,	34	10.0,	139.0,	172.0,	-52.0,	-46.3,
35	10.0,	155.9,	176.7,	-46.8,	-39.7,	36	10.0,	168.1,	176.0,	-40.2,	-31.9,

SOURCE ID: SFQ5F00Y

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-39.1,	-29.4,	2	10.0,	177.0,	158.8,	-29.1,	-21.0,
3	10.0,	173.4,	142.7,	-18.2,	-11.9,	4	10.0,	164.5,	122.4,	-6.8,	-2.5,
5	10.0,	150.6,	98.3,	4.9,	7.0,	6	10.0,	162.1,	117.8,	-6.9,	16.3,
7	10.0,	172.0,	139.0,	-21.1,	25.1,	8	10.0,	176.7,	155.9,	-34.7,	33.1,
9	10.0,	176.0,	168.1,	-47.2,	40.1,	10	10.0,	170.0,	175.2,	-58.2,	45.9,
11	10.0,	158.8,	177.0,	-67.5,	50.3,	12	10.0,	142.7,	173.4,	-74.8,	53.2,
13	10.0,	122.4,	164.5,	-79.8,	54.4,	14	10.0,	98.3,	150.6,	-82.3,	54.0,
15	10.0,	117.8,	162.1,	-97.3,	52.0,	16	10.0,	139.0,	172.0,	-111.1,	48.4,
17	10.0,	155.9,	176.7,	-121.4,	43.3,	18	10.0,	168.1,	176.0,	-128.1,	36.9,
19	10.0,	175.2,	170.0,	-130.9,	29.4,	20	10.0,	177.0,	158.8,	-129.7,	21.0,
21	10.0,	173.4,	142.7,	-124.5,	11.9,	22	10.0,	164.5,	122.4,	-115.6,	2.5,
23	10.0,	150.6,	98.3,	-103.2,	-7.0,	24	10.0,	162.1,	117.8,	-110.9,	-16.3,
25	10.0,	172.0,	139.0,	-117.9,	-25.1,	26	10.0,	176.7,	155.9,	-121.3,	-33.1,
27	10.0,	176.0,	168.1,	-121.0,	-40.1,	28	10.0,	170.0,	175.2,	-117.0,	-45.9,
29	10.0,	158.8,	177.0,	-109.5,	-50.3,	30	10.0,	142.7,	173.4,	-98.6,	-53.2,
31	10.0,	122.4,	164.5,	-84.8,	-54.4,	32	10.0,	98.3,	150.6,	-68.3,	-54.0,
33	10.0,	117.8,	162.1,	-64.8,	-52.0,	34	10.0,	139.0,	172.0,	-61.0,	-48.4,
35	10.0,	155.9,	176.7,	-55.3,	-43.3,	36	10.0,	168.1,	176.0,	-47.9,	-36.9,

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: SFQ5F00Z

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-42.9,	-35.6,	2	10.0,	177.0,	158.8,	-31.7,	-27.8,
3	10.0,	173.4,	142.7,	-19.6,	-19.1,	4	10.0,	164.5,	122.4,	-6.9,	-9.8,
5	10.0,	150.6,	98.3,	6.0,	-0.2,	6	10.0,	162.1,	117.8,	-4.5,	9.4,
7	10.0,	172.0,	139.0,	-17.6,	18.7,	8	10.0,	176.7,	155.9,	-30.1,	27.4,
9	10.0,	176.0,	168.1,	-41.7,	35.3,	10	10.0,	170.0,	175.2,	-52.0,	42.1,
11	10.0,	158.8,	177.0,	-60.7,	47.7,	12	10.0,	142.7,	173.4,	-67.6,	51.8,
13	10.0,	122.4,	164.5,	-72.5,	54.3,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-90.4,	54.4,	16	10.0,	139.0,	172.0,	-104.7,	51.9,
17	10.0,	155.9,	176.7,	-115.8,	47.9,	18	10.0,	168.1,	176.0,	-123.3,	42.4,
19	10.0,	175.2,	170.0,	-127.1,	35.6,	20	10.0,	177.0,	158.8,	-127.0,	27.8,
21	10.0,	173.4,	142.7,	-123.1,	19.1,	22	10.0,	164.5,	122.4,	-115.5,	9.8,
23	10.0,	150.6,	98.3,	-104.3,	0.2,	24	10.0,	162.1,	117.8,	-113.3,	-9.4,
25	10.0,	172.0,	139.0,	-121.4,	-18.7,	26	10.0,	176.7,	155.9,	-125.8,	-27.4,
27	10.0,	176.0,	168.1,	-126.5,	-35.3,	28	10.0,	170.0,	175.2,	-123.2,	-42.1,
29	10.0,	158.8,	177.0,	-116.3,	-47.7,	30	10.0,	142.7,	173.4,	-105.8,	-51.8,
31	10.0,	122.4,	164.5,	-92.0,	-54.3,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-71.7,	-54.4,	34	10.0,	139.0,	172.0,	-67.4,	-51.9,
35	10.0,	155.9,	176.7,	-61.0,	-47.9,	36	10.0,	168.1,	176.0,	-52.7,	-42.4,

SOURCE ID: SFQ5F010

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-50.5,	-42.2,	2	10.0,	177.0,	158.8,	-38.1,	-35.5,
3	10.0,	173.4,	142.7,	-24.6,	-27.8,	4	10.0,	164.5,	122.4,	-10.3,	-19.3,
5	10.0,	150.6,	98.3,	4.3,	-10.2,	6	10.0,	162.1,	117.8,	-4.5,	-0.7,
7	10.0,	172.0,	139.0,	-15.8,	8.7,	8	10.0,	176.7,	155.9,	-26.6,	17.9,

HR Attachment A

9	10.0,	176.0,	168.1,	-36.6,	26.6,	10	10.0,	170.0,	175.2,	-45.5,	34.4,
11	10.0,	158.8,	177.0,	-53.0,	41.2,	12	10.0,	142.7,	173.4,	-58.9,	46.8,
13	10.0,	122.4,	164.5,	-63.0,	50.9,	14	10.0,	98.3,	150.6,	-65.2,	53.5,
15	10.0,	117.8,	162.1,	-80.3,	54.4,	16	10.0,	139.0,	172.0,	-94.8,	53.7,
17	10.0,	155.9,	176.7,	-106.3,	51.4,	18	10.0,	168.1,	176.0,	-114.6,	47.5,
19	10.0,	175.2,	170.0,	-119.4,	42.2,	20	10.0,	177.0,	158.8,	-120.6,	35.5,
21	10.0,	173.4,	142.7,	-118.1,	27.8,	22	10.0,	164.5,	122.4,	-112.1,	19.3,
23	10.0,	150.6,	98.3,	-102.6,	10.2,	24	10.0,	162.1,	117.8,	-113.3,	0.7,
25	10.0,	172.0,	139.0,	-123.2,	-8.7,	26	10.0,	176.7,	155.9,	-129.4,	-17.9,
27	10.0,	176.0,	168.1,	-131.6,	-26.6,	28	10.0,	170.0,	175.2,	-129.8,	-34.4,
29	10.0,	158.8,	177.0,	-124.0,	-41.2,	30	10.0,	142.7,	173.4,	-114.5,	-46.8,
31	10.0,	122.4,	164.5,	-101.5,	-50.9,	32	10.0,	98.3,	150.6,	-85.5,	-53.5,
33	10.0,	117.8,	162.1,	-81.8,	-54.4,	34	10.0,	139.0,	172.0,	-77.3,	-53.7,
35	10.0,	155.9,	176.7,	-70.4,	-51.4,	36	10.0,	168.1,	176.0,	-61.4,	-47.5,

SOURCE ID: SFQ5F011

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-57.6,	-49.5,	2	10.0,	177.0,	158.8,	-43.8,	-44.0,
3	10.0,	173.4,	142.7,	-28.7,	-37.1,	4	10.0,	164.5,	122.4,	-12.7,	-29.2,
5	10.0,	150.6,	98.3,	3.7,	-20.3,	6	10.0,	162.1,	117.8,	-3.4,	-10.8,
7	10.0,	172.0,	139.0,	-12.9,	-1.0,	8	10.0,	176.7,	155.9,	-22.1,	8.8,
9	10.0,	176.0,	168.1,	-30.6,	18.4,	10	10.0,	170.0,	175.2,	-38.1,	27.4,
11	10.0,	158.8,	177.0,	-44.5,	35.6,	12	10.0,	142.7,	173.4,	-49.6,	42.7,
13	10.0,	122.4,	164.5,	-53.1,	48.5,	14	10.0,	98.3,	150.6,	-55.0,	52.8,
15	10.0,	117.8,	162.1,	-70.2,	55.5,	16	10.0,	139.0,	172.0,	-85.0,	56.6,
17	10.0,	155.9,	176.7,	-97.2,	55.9,	18	10.0,	168.1,	176.0,	-106.4,	53.5,
19	10.0,	175.2,	170.0,	-112.4,	49.5,	20	10.0,	177.0,	158.8,	-115.0,	44.0,
21	10.0,	173.4,	142.7,	-114.0,	37.1,	22	10.0,	164.5,	122.4,	-109.7,	29.2,
23	10.0,	150.6,	98.3,	-102.0,	20.3,	24	10.0,	162.1,	117.8,	-114.4,	10.8,
25	10.0,	172.0,	139.0,	-126.1,	1.0,	26	10.0,	176.7,	155.9,	-133.9,	-8.8,
27	10.0,	176.0,	168.1,	-137.6,	-18.4,	28	10.0,	170.0,	175.2,	-137.1,	-27.4,
29	10.0,	158.8,	177.0,	-132.5,	-35.6,	30	10.0,	142.7,	173.4,	-123.8,	-42.7,
31	10.0,	122.4,	164.5,	-111.4,	-48.5,	32	10.0,	98.3,	150.6,	-95.6,	-52.8,
33	10.0,	117.8,	162.1,	-91.9,	-55.5,	34	10.0,	139.0,	172.0,	-87.0,	-56.6,
35	10.0,	155.9,	176.7,	-79.5,	-55.9,	36	10.0,	168.1,	176.0,	-69.6,	-53.5,

SOURCE ID: SFQ5F012

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-63.2,	-55.7,	2	10.0,	177.0,	158.8,	-48.3,	-51.0,
3	10.0,	173.4,	142.7,	-31.9,	-44.8,	4	10.0,	164.5,	122.4,	-14.5,	-37.3,
5	10.0,	150.6,	98.3,	3.3,	-28.6,	6	10.0,	162.1,	117.8,	-2.3,	-19.1,
7	10.0,	172.0,	139.0,	-10.4,	-9.0,	8	10.0,	176.7,	155.9,	-18.2,	1.4,
9	10.0,	176.0,	168.1,	-25.5,	11.8,	10	10.0,	170.0,	175.2,	-31.9,	21.8,
11	10.0,	158.8,	177.0,	-37.5,	31.1,	12	10.0,	142.7,	173.4,	-41.8,	39.5,
13	10.0,	122.4,	164.5,	-44.9,	46.7,	14	10.0,	98.3,	150.6,	-46.7,	52.5,
15	10.0,	117.8,	162.1,	-62.0,	56.6,	16	10.0,	139.0,	172.0,	-77.1,	59.1,
17	10.0,	155.9,	176.7,	-89.8,	59.8,	18	10.0,	168.1,	176.0,	-99.8,	58.6,
19	10.0,	175.2,	170.0,	-106.8,	55.7,	20	10.0,	177.0,	158.8,	-110.5,	51.0,
21	10.0,	173.4,	142.7,	-110.9,	44.8,	22	10.0,	164.5,	122.4,	-107.9,	37.3,
23	10.0,	150.6,	98.3,	-101.6,	28.6,	24	10.0,	162.1,	117.8,	-115.6,	19.1,
25	10.0,	172.0,	139.0,	-128.6,	9.0,	26	10.0,	176.7,	155.9,	-137.7,	-1.4,
27	10.0,	176.0,	168.1,	-142.7,	-11.8,	28	10.0,	170.0,	175.2,	-143.3,	-21.8,
29	10.0,	158.8,	177.0,	-139.5,	-31.1,	30	10.0,	142.7,	173.4,	-131.6,	-39.5,
31	10.0,	122.4,	164.5,	-119.6,	-46.7,	32	10.0,	98.3,	150.6,	-104.0,	-52.5,
33	10.0,	117.8,	162.1,	-100.2,	-56.6,	34	10.0,	139.0,	172.0,	-95.0,	-59.1,
35	10.0,	155.9,	176.7,	-86.9,	-59.8,	36	10.0,	168.1,	176.0,	-76.2,	-58.6,

**MODELOPTs: RegDFAULT CONC ELEV RURAL

HR Attachment A
*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: SFQ5F013

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	5.4,	13.8,	2	10.0,	177.0,	158.8,	7.2,	29.3,
3	10.0,	173.4,	142.7,	8.8,	43.9,	4	10.0,	164.5,	122.4,	10.2,	57.1,
5	10.0,	150.6,	98.3,	11.2,	68.7,	6	10.0,	162.1,	117.8,	-11.4,	78.1,
7	10.0,	172.0,	139.0,	-36.3,	85.2,	8	10.0,	176.7,	155.9,	-60.0,	89.6,
9	10.0,	176.0,	168.1,	-82.0,	91.4,	10	0.0,	0.0,	0.0,	0.0,	0.0,
11	0.0,	0.0,	0.0,	0.0,	0.0,	12	0.0,	0.0,	0.0,	0.0,	0.0,
13	0.0,	0.0,	0.0,	0.0,	0.0,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-159.2,	47.5,	16	10.0,	139.0,	172.0,	-171.2,	33.2,
17	10.0,	155.9,	176.7,	-178.0,	17.9,	18	10.0,	168.1,	176.0,	-179.4,	2.1,
19	10.0,	175.2,	170.0,	-175.4,	-13.8,	20	10.0,	177.0,	158.8,	-166.0,	-29.3,
21	10.0,	173.4,	142.7,	-151.6,	-43.9,	22	10.0,	164.5,	122.4,	-132.5,	-57.1,
23	10.0,	150.6,	98.3,	-109.5,	-68.7,	24	10.0,	162.1,	117.8,	-106.4,	-78.1,
25	10.0,	172.0,	139.0,	-102.7,	-85.2,	26	10.0,	176.7,	155.9,	-95.9,	-89.6,
27	10.0,	176.0,	168.1,	-86.2,	-91.4,	28	0.0,	0.0,	0.0,	0.0,	0.0,
29	0.0,	0.0,	0.0,	0.0,	0.0,	30	0.0,	0.0,	0.0,	0.0,	0.0,
31	0.0,	0.0,	0.0,	0.0,	0.0,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-3.0,	-47.5,	34	10.0,	139.0,	172.0,	-0.9,	-33.2,
35	10.0,	155.9,	176.7,	1.3,	-17.9,	36	10.0,	168.1,	176.0,	3.4,	-2.1,

SOURCE ID: SFQ5F014

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-1.6,	5.9,	2	10.0,	177.0,	158.8,	1.8,	20.3,
3	10.0,	173.4,	142.7,	5.0,	34.1,	4	10.0,	164.5,	122.4,	8.1,	46.8,
5	10.0,	150.6,	98.3,	11.0,	58.1,	6	10.0,	162.1,	117.8,	-9.8,	67.7,
7	10.0,	172.0,	139.0,	-32.9,	75.2,	8	10.0,	176.7,	155.9,	-55.0,	80.4,
9	10.0,	176.0,	168.1,	-75.4,	83.2,	10	10.0,	170.0,	175.2,	-93.5,	83.4,
11	10.0,	158.8,	177.0,	-108.8,	81.1,	12	0.0,	0.0,	0.0,	0.0,	0.0,
13	0.0,	0.0,	0.0,	0.0,	0.0,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-148.8,	49.1,	16	10.0,	139.0,	172.0,	-161.2,	36.6,
17	10.0,	155.9,	176.7,	-168.8,	23.0,	18	10.0,	168.1,	176.0,	-171.2,	8.7,
19	10.0,	175.2,	170.0,	-168.4,	-5.9,	20	10.0,	177.0,	158.8,	-160.5,	-20.3,
21	10.0,	173.4,	142.7,	-147.8,	-34.1,	22	10.0,	164.5,	122.4,	-130.5,	-46.8,
23	10.0,	150.6,	98.3,	-109.3,	-58.1,	24	10.0,	162.1,	117.8,	-108.0,	-67.7,
25	10.0,	172.0,	139.0,	-106.1,	-75.2,	26	10.0,	176.7,	155.9,	-101.0,	-80.4,
27	10.0,	176.0,	168.1,	-92.8,	-83.2,	28	10.0,	170.0,	175.2,	-81.7,	-83.4,
29	10.0,	158.8,	177.0,	-68.2,	-81.1,	30	0.0,	0.0,	0.0,	0.0,	0.0,
31	0.0,	0.0,	0.0,	0.0,	0.0,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-13.4,	-49.1,	34	10.0,	139.0,	172.0,	-10.8,	-36.6,
35	10.0,	155.9,	176.7,	-7.9,	-23.0,	36	10.0,	168.1,	176.0,	-4.8,	-8.7,

SOURCE ID: SFQ5F015

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-5.8,	1.5,	2	10.0,	177.0,	158.8,	-1.7,	15.2,
3	10.0,	173.4,	142.7,	2.5,	28.4,	4	10.0,	164.5,	122.4,	6.6,	40.8,
5	10.0,	150.6,	98.3,	10.5,	52.0,	6	10.0,	162.1,	117.8,	-9.2,	61.6,
7	10.0,	172.0,	139.0,	-31.2,	69.3,	8	10.0,	176.7,	155.9,	-52.3,	74.9,
9	10.0,	176.0,	168.1,	-71.8,	78.2,	10	10.0,	170.0,	175.2,	-89.1,	79.1,
11	10.0,	158.8,	177.0,	-103.7,	77.7,	12	10.0,	142.7,	173.4,	-115.1,	73.9,
13	0.0,	0.0,	0.0,	0.0,	0.0,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-142.6,	49.8,	16	10.0,	139.0,	172.0,	-155.3,	38.3,
17	10.0,	155.9,	176.7,	-163.2,	25.7,	18	10.0,	168.1,	176.0,	-166.2,	12.3,
19	10.0,	175.2,	170.0,	-164.1,	-1.5,	20	10.0,	177.0,	158.8,	-157.1,	-15.2,
21	10.0,	173.4,	142.7,	-145.2,	-28.4,	22	10.0,	164.5,	122.4,	-129.0,	-40.8,
23	10.0,	150.6,	98.3,	-108.8,	-52.0,	24	10.0,	162.1,	117.8,	-108.7,	-61.6,
25	10.0,	172.0,	139.0,	-107.8,	-69.3,	26	10.0,	176.7,	155.9,	-103.7,	-74.9,
27	10.0,	176.0,	168.1,	-96.4,	-78.2,	28	10.0,	170.0,	175.2,	-86.1,	-79.1,
29	10.0,	158.8,	177.0,	-73.3,	-77.7,	30	10.0,	142.7,	173.4,	-58.2,	-73.9,
31	0.0,	0.0,	0.0,	0.0,	0.0,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-19.5,	-49.8,	34	10.0,	139.0,	172.0,	-16.8,	-38.3,
35	10.0,	155.9,	176.7,	-13.5,	-25.7,	36	10.0,	168.1,	176.0,	-9.8,	-12.3,

HR Attachment A

SOURCE ID: SFQ5F016

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-11.2,	-3.8,	2	10.0,	177.0,	158.8,	-6.1,	9.0,
3	10.0,	173.4,	142.7,	-0.7,	21.6,	4	10.0,	164.5,	122.4,	4.6,	33.6,
5	10.0,	150.6,	98.3,	9.9,	44.5,	6	10.0,	162.1,	117.8,	-8.6,	54.0,
7	10.0,	172.0,	139.0,	-29.3,	62.0,	8	10.0,	176.7,	155.9,	-49.1,	68.0,
9	10.0,	176.0,	168.1,	-67.5,	72.0,	10	10.0,	170.0,	175.2,	-83.8,	73.8,
11	10.0,	158.8,	177.0,	-97.5,	73.3,	12	10.0,	142.7,	173.4,	-108.3,	70.6,
13	10.0,	122.4,	164.5,	-115.8,	65.8,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-135.1,	50.4,	16	10.0,	139.0,	172.0,	-148.0,	40.2,
17	10.0,	155.9,	176.7,	-156.4,	28.9,	18	10.0,	168.1,	176.0,	-160.0,	16.6,
19	10.0,	175.2,	170.0,	-158.8,	3.8,	20	10.0,	177.0,	158.8,	-152.7,	-9.0,
21	10.0,	173.4,	142.7,	-142.0,	-21.6,	22	10.0,	164.5,	122.4,	-127.0,	-33.6,
23	10.0,	150.6,	98.3,	-108.1,	-44.5,	24	10.0,	162.1,	117.8,	-109.3,	-54.0,
25	10.0,	172.0,	139.0,	-109.7,	-62.0,	26	10.0,	176.7,	155.9,	-106.8,	-68.0,
27	10.0,	176.0,	168.1,	-100.7,	-72.0,	28	10.0,	170.0,	175.2,	-91.5,	-73.8,
29	10.0,	158.8,	177.0,	-79.5,	-73.3,	30	10.0,	142.7,	173.4,	-65.1,	-70.6,
31	10.0,	122.4,	164.5,	-48.7,	-65.8,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-27.0,	-50.4,	34	10.0,	139.0,	172.0,	-24.1,	-40.2,
35	10.0,	155.9,	176.7,	-20.3,	-28.9,	36	10.0,	168.1,	176.0,	-16.0,	-16.6,

*** AERMOD - VERSION 15181 *** *** PM10 exhaust only Tier IV ***
05/08/16
*** AERMET - VERSION 14134 *** *** ***
16:58:03

PAGE 16
**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: SFQ5F017

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-16.0,	-8.6,	2	10.0,	177.0,	158.8,	-9.9,	3.5,
3	10.0,	173.4,	142.7,	-3.5,	15.5,	4	10.0,	164.5,	122.4,	2.9,	27.0,
5	10.0,	150.6,	98.3,	9.3,	37.8,	6	10.0,	162.1,	117.8,	-7.9,	47.3,
7	10.0,	172.0,	139.0,	-27.5,	55.5,	8	10.0,	176.7,	155.9,	-46.2,	61.9,
9	10.0,	176.0,	168.1,	-63.6,	66.5,	10	10.0,	170.0,	175.2,	-79.0,	69.0,
11	10.0,	158.8,	177.0,	-92.0,	69.5,	12	10.0,	142.7,	173.4,	-102.2,	67.8,
13	10.0,	122.4,	164.5,	-109.3,	64.1,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-128.4,	51.0,	16	10.0,	139.0,	172.0,	-141.5,	42.0,
17	10.0,	155.9,	176.7,	-150.3,	31.7,	18	10.0,	168.1,	176.0,	-154.5,	20.5,
19	10.0,	175.2,	170.0,	-154.0,	8.6,	20	10.0,	177.0,	158.8,	-148.9,	-3.5,
21	10.0,	173.4,	142.7,	-139.2,	-15.5,	22	10.0,	164.5,	122.4,	-125.3,	-27.0,
23	10.0,	150.6,	98.3,	-107.6,	-37.8,	24	10.0,	162.1,	117.8,	-109.9,	-47.3,
25	10.0,	172.0,	139.0,	-111.5,	-55.5,	26	10.0,	176.7,	155.9,	-109.7,	-61.9,
27	10.0,	176.0,	168.1,	-104.6,	-66.5,	28	10.0,	170.0,	175.2,	-96.3,	-69.0,
29	10.0,	158.8,	177.0,	-85.0,	-69.5,	30	10.0,	142.7,	173.4,	-71.2,	-67.8,
31	10.0,	122.4,	164.5,	-55.2,	-64.1,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-33.7,	-51.0,	34	10.0,	139.0,	172.0,	-30.6,	-42.0,
35	10.0,	155.9,	176.7,	-26.4,	-31.7,	36	10.0,	168.1,	176.0,	-21.5,	-20.5,

SOURCE ID: SFQ5F018

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-20.8,	-14.0,	2	10.0,	177.0,	158.8,	-13.7,	-2.6,
3	10.0,	173.4,	142.7,	-6.3,	8.8,	4	10.0,	164.5,	122.4,	1.4,	20.0,
5	10.0,	150.6,	98.3,	9.0,	30.6,	6	10.0,	162.1,	117.8,	-7.0,	40.2,
7	10.0,	172.0,	139.0,	-25.3,	48.6,	8	10.0,	176.7,	155.9,	-42.9,	55.5,
9	10.0,	176.0,	168.1,	-59.2,	60.8,	10	10.0,	170.0,	175.2,	-73.6,	64.2,
11	10.0,	158.8,	177.0,	-85.9,	65.6,	12	10.0,	142.7,	173.4,	-95.5,	65.1,
13	10.0,	122.4,	164.5,	-102.3,	62.6,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-121.3,	52.0,	16	10.0,	139.0,	172.0,	-134.6,	44.2,
17	10.0,	155.9,	176.7,	-143.9,	35.1,	18	10.0,	168.1,	176.0,	-148.8,	24.9,

HR Attachment A

19	10.0,	175.2,	170.0,	-149.2,	14.0,	20	10.0,	177.0,	158.8,	-145.0,	2.6,
21	10.0,	173.4,	142.7,	-136.5,	-8.8,	22	10.0,	164.5,	122.4,	-123.8,	-20.0,
23	10.0,	150.6,	98.3,	-107.3,	-30.6,	24	10.0,	162.1,	117.8,	-110.9,	-40.2,
25	10.0,	172.0,	139.0,	-113.7,	-48.6,	26	10.0,	176.7,	155.9,	-113.0,	-55.5,
27	10.0,	176.0,	168.1,	-109.0,	-60.8,	28	10.0,	170.0,	175.2,	-101.6,	-64.2,
29	10.0,	158.8,	177.0,	-91.1,	-65.6,	30	10.0,	142.7,	173.4,	-77.9,	-65.1,
31	10.0,	122.4,	164.5,	-62.3,	-62.6,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-40.9,	-52.0,	34	10.0,	139.0,	172.0,	-37.4,	-44.2,
35	10.0,	155.9,	176.7,	-32.8,	-35.1,	36	10.0,	168.1,	176.0,	-27.2,	-24.9,

SOURCE ID: SFQ5F019

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-25.5,	-19.5,	2	10.0,	177.0,	158.8,	-17.4,	-8.8,
3	10.0,	173.4,	142.7,	-8.8,	2.0,	4	10.0,	164.5,	122.4,	0.1,	12.9,
5	10.0,	150.6,	98.3,	8.9,	23.3,	6	10.0,	162.1,	117.8,	-5.8,	33.0,
7	10.0,	172.0,	139.0,	-22.9,	41.8,	8	10.0,	176.7,	155.9,	-39.3,	49.2,
9	10.0,	176.0,	168.1,	-54.6,	55.2,	10	10.0,	170.0,	175.2,	-68.1,	59.5,
11	10.0,	158.8,	177.0,	-79.7,	61.9,	12	10.0,	142.7,	173.4,	-88.7,	62.5,
13	10.0,	122.4,	164.5,	-95.1,	61.2,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-114.1,	53.1,	16	10.0,	139.0,	172.0,	-127.8,	46.6,
17	10.0,	155.9,	176.7,	-137.6,	38.6,	18	10.0,	168.1,	176.0,	-143.2,	29.5,
19	10.0,	175.2,	170.0,	-144.5,	19.5,	20	10.0,	177.0,	158.8,	-141.3,	8.8,
21	10.0,	173.4,	142.7,	-133.9,	-2.0,	22	10.0,	164.5,	122.4,	-122.4,	-12.9,
23	10.0,	150.6,	98.3,	-107.2,	-23.3,	24	10.0,	162.1,	117.8,	-112.1,	-33.0,
25	10.0,	172.0,	139.0,	-116.1,	-41.8,	26	10.0,	176.7,	155.9,	-116.6,	-49.2,
27	10.0,	176.0,	168.1,	-113.6,	-55.2,	28	10.0,	170.0,	175.2,	-107.1,	-59.5,
29	10.0,	158.8,	177.0,	-97.3,	-61.9,	30	10.0,	142.7,	173.4,	-84.6,	-62.5,
31	10.0,	122.4,	164.5,	-69.4,	-61.2,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-48.0,	-53.1,	34	10.0,	139.0,	172.0,	-44.2,	-46.6,
35	10.0,	155.9,	176.7,	-39.1,	-38.6,	36	10.0,	168.1,	176.0,	-32.8,	-29.5,

SOURCE ID: SFQ5F01A

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-31.6,	-25.5,	2	10.0,	177.0,	158.8,	-22.3,	-15.8,
3	10.0,	173.4,	142.7,	-12.4,	-5.7,	4	10.0,	164.5,	122.4,	-2.2,	4.6,
5	10.0,	150.6,	98.3,	8.2,	14.8,	6	10.0,	162.1,	117.8,	-5.0,	24.5,
7	10.0,	172.0,	139.0,	-20.7,	33.5,	8	10.0,	176.7,	155.9,	-35.7,	41.5,
9	10.0,	176.0,	168.1,	-49.7,	48.2,	10	10.0,	170.0,	175.2,	-62.1,	53.4,
11	10.0,	158.8,	177.0,	-72.7,	57.0,	12	10.0,	142.7,	173.4,	-81.0,	58.9,
13	10.0,	122.4,	164.5,	-86.9,	59.0,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-105.6,	53.9,	16	10.0,	139.0,	172.0,	-119.5,	48.8,
17	10.0,	155.9,	176.7,	-129.8,	42.2,	18	10.0,	168.1,	176.0,	-136.2,	34.4,
19	10.0,	175.2,	170.0,	-138.4,	25.5,	20	10.0,	177.0,	158.8,	-136.4,	15.8,
21	10.0,	173.4,	142.7,	-130.3,	5.7,	22	10.0,	164.5,	122.4,	-120.2,	-4.6,
23	10.0,	150.6,	98.3,	-106.5,	-14.8,	24	10.0,	162.1,	117.8,	-112.8,	-24.5,
25	10.0,	172.0,	139.0,	-118.3,	-33.5,	26	10.0,	176.7,	155.9,	-120.2,	-41.5,
27	10.0,	176.0,	168.1,	-118.5,	-48.2,	28	10.0,	170.0,	175.2,	-113.1,	-53.4,
29	10.0,	158.8,	177.0,	-104.3,	-57.0,	30	10.0,	142.7,	173.4,	-92.4,	-58.9,
31	10.0,	122.4,	164.5,	-77.6,	-59.0,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-56.5,	-53.9,	34	10.0,	139.0,	172.0,	-52.5,	-48.8,
35	10.0,	155.9,	176.7,	-46.9,	-42.2,	36	10.0,	168.1,	176.0,	-39.8,	-34.4,

*** AERMOD - VERSION 15181 *** *** PM10 exhaust only Tier IV ***
05/08/16
*** AERMET - VERSION 14134 *** *** ***
16:58:03

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**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: SFQ5F01B

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ

HR Attachment A

1	10.0,	175.2,	170.0,	-37.5,	-32.3,	2	10.0,	177.0,	158.8,	-27.0,	-23.6,
3	10.0,	173.4,	142.7,	-15.7,	-14.1,	4	10.0,	164.5,	122.4,	-3.9,	-4.2,
5	10.0,	150.6,	98.3,	8.1,	5.8,	6	10.0,	162.1,	117.8,	-3.6,	15.6,
7	10.0,	172.0,	139.0,	-17.7,	25.0,	8	10.0,	176.7,	155.9,	-31.3,	33.6,
9	10.0,	176.0,	168.1,	-44.0,	41.2,	10	10.0,	170.0,	175.2,	-55.3,	47.5,
11	10.0,	158.8,	177.0,	-64.9,	52.4,	12	10.0,	142.7,	173.4,	-72.6,	55.7,
13	10.0,	122.4,	164.5,	-78.0,	57.3,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-96.7,	55.3,	16	10.0,	139.0,	172.0,	-111.0,	51.8,
17	10.0,	155.9,	176.7,	-122.0,	46.6,	18	10.0,	168.1,	176.0,	-129.2,	40.1,
19	10.0,	175.2,	170.0,	-132.5,	32.3,	20	10.0,	177.0,	158.8,	-131.8,	23.6,
21	10.0,	173.4,	142.7,	-127.1,	14.1,	22	10.0,	164.5,	122.4,	-118.5,	4.2,
23	10.0,	150.6,	98.3,	-106.3,	-5.8,	24	10.0,	162.1,	117.8,	-114.2,	-15.6,
25	10.0,	172.0,	139.0,	-121.3,	-25.0,	26	10.0,	176.7,	155.9,	-124.6,	-33.6,
27	10.0,	176.0,	168.1,	-124.2,	-41.2,	28	10.0,	170.0,	175.2,	-120.0,	-47.5,
29	10.0,	158.8,	177.0,	-112.1,	-52.4,	30	10.0,	142.7,	173.4,	-100.8,	-55.7,
31	10.0,	122.4,	164.5,	-86.5,	-57.3,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-65.5,	-55.3,	34	10.0,	139.0,	172.0,	-61.0,	-51.8,
35	10.0,	155.9,	176.7,	-54.8,	-46.6,	36	10.0,	168.1,	176.0,	-46.8,	-40.1,

SOURCE ID: SFQ5F01C

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-41.8,	-36.9,	2	10.0,	177.0,	158.8,	-30.5,	-28.8,
3	10.0,	173.4,	142.7,	-18.2,	-19.9,	4	10.0,	164.5,	122.4,	-5.4,	-10.4,
5	10.0,	150.6,	98.3,	7.6,	-0.5,	6	10.0,	162.1,	117.8,	-2.9,	9.4,
7	10.0,	172.0,	139.0,	-16.0,	18.9,	8	10.0,	176.7,	155.9,	-28.6,	27.9,
9	10.0,	176.0,	168.1,	-40.3,	36.1,	10	10.0,	170.0,	175.2,	-50.8,	43.1,
11	10.0,	158.8,	177.0,	-59.7,	48.9,	12	10.0,	142.7,	173.4,	-66.8,	53.1,
13	10.0,	122.4,	164.5,	-71.9,	55.8,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-90.4,	56.0,	16	10.0,	139.0,	172.0,	-105.0,	53.5,
17	10.0,	155.9,	176.7,	-116.3,	49.4,	18	10.0,	168.1,	176.0,	-124.1,	43.8,
19	10.0,	175.2,	170.0,	-128.1,	36.9,	20	10.0,	177.0,	158.8,	-128.3,	28.8,
21	10.0,	173.4,	142.7,	-124.5,	19.9,	22	10.0,	164.5,	122.4,	-117.0,	10.4,
23	10.0,	150.6,	98.3,	-105.9,	0.5,	24	10.0,	162.1,	117.8,	-114.9,	-9.4,
25	10.0,	172.0,	139.0,	-123.0,	-18.9,	26	10.0,	176.7,	155.9,	-127.4,	-27.9,
27	10.0,	176.0,	168.1,	-127.9,	-36.1,	28	10.0,	170.0,	175.2,	-124.5,	-43.1,
29	10.0,	158.8,	177.0,	-117.3,	-48.9,	30	10.0,	142.7,	173.4,	-106.6,	-53.1,
31	10.0,	122.4,	164.5,	-92.6,	-55.8,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-71.7,	-56.0,	34	10.0,	139.0,	172.0,	-67.1,	-53.5,
35	10.0,	155.9,	176.7,	-60.4,	-49.4,	36	10.0,	168.1,	176.0,	-51.9,	-43.8,

SOURCE ID: SFQ5F01D

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-47.5,	-42.5,	2	10.0,	177.0,	158.8,	-35.1,	-35.4,
3	10.0,	173.4,	142.7,	-21.6,	-27.2,	4	10.0,	164.5,	122.4,	-7.5,	-18.1,
5	10.0,	150.6,	98.3,	6.9,	-8.5,	6	10.0,	162.1,	117.8,	-2.3,	1.3,
7	10.0,	172.0,	139.0,	-13.9,	11.2,	8	10.0,	176.7,	155.9,	-25.2,	20.6,
9	10.0,	176.0,	168.1,	-35.7,	29.5,	10	10.0,	170.0,	175.2,	-45.1,	37.4,
11	10.0,	158.8,	177.0,	-53.1,	44.3,	12	10.0,	142.7,	173.4,	-59.5,	49.7,
13	10.0,	122.4,	164.5,	-64.1,	53.7,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-82.4,	56.7,	16	10.0,	139.0,	172.0,	-97.2,	55.6,
17	10.0,	155.9,	176.7,	-109.0,	52.8,	18	10.0,	168.1,	176.0,	-117.5,	48.4,
19	10.0,	175.2,	170.0,	-122.4,	42.5,	20	10.0,	177.0,	158.8,	-123.6,	35.4,
21	10.0,	173.4,	142.7,	-121.1,	27.2,	22	10.0,	164.5,	122.4,	-114.9,	18.1,
23	10.0,	150.6,	98.3,	-105.2,	8.5,	24	10.0,	162.1,	117.8,	-115.6,	-1.3,
25	10.0,	172.0,	139.0,	-125.1,	-11.2,	26	10.0,	176.7,	155.9,	-130.8,	-20.6,
27	10.0,	176.0,	168.1,	-132.5,	-29.5,	28	10.0,	170.0,	175.2,	-130.2,	-37.4,
29	10.0,	158.8,	177.0,	-123.9,	-44.3,	30	10.0,	142.7,	173.4,	-113.9,	-49.7,
31	10.0,	122.4,	164.5,	-100.4,	-53.7,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	10.0,	117.8,	162.1,	-79.7,	-56.7,	34	10.0,	139.0,	172.0,	-74.9,	-55.6,
35	10.0,	155.9,	176.7,	-67.7,	-52.8,	36	10.0,	168.1,	176.0,	-58.5,	-48.4,

SOURCE ID: SFQ5F01E

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-87.2,	-89.6,	2	10.0,	177.0,	158.8,	-66.0,	-88.7,

HR Attachment A

3	10.0,	173.4,	142.7,	-42.8,	-85.0,	4	10.0,	164.5,	122.4,	-18.2,	-78.7,
5	10.0,	150.6,	98.3,	6.8,	-70.1,	6	10.0,	162.1,	117.8,	8.4,	-59.3,
7	10.0,	172.0,	139.0,	7.0,	-46.7,	8	10.0,	176.7,	155.9,	5.5,	-32.7,
9	10.0,	176.0,	168.1,	3.8,	-17.7,	10	10.0,	170.0,	175.2,	2.0,	-2.2,
11	10.0,	158.8,	177.0,	0.2,	13.4,	12	10.0,	142.7,	173.4,	-1.7,	28.6,
13	10.0,	122.4,	164.5,	-3.5,	42.9,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	0.0,	0.0,	0.0,	0.0,	0.0,	16	0.0,	0.0,	0.0,	0.0,	0.0,
17	0.0,	0.0,	0.0,	0.0,	0.0,	18	10.0,	168.1,	176.0,	-70.3,	87.9,
19	10.0,	175.2,	170.0,	-82.8,	89.6,	20	10.0,	177.0,	158.8,	-92.8,	88.7,
21	10.0,	173.4,	142.7,	-100.0,	85.0,	22	10.0,	164.5,	122.4,	-104.1,	78.7,
23	10.0,	150.6,	98.3,	-105.1,	70.1,	24	10.0,	162.1,	117.8,	-126.2,	59.3,
25	10.0,	172.0,	139.0,	-146.0,	46.7,	26	10.0,	176.7,	155.9,	-161.5,	32.7,
27	10.0,	176.0,	168.1,	-172.0,	17.7,	28	10.0,	170.0,	175.2,	-177.3,	2.2,
29	10.0,	158.8,	177.0,	-177.2,	-13.4,	30	10.0,	142.7,	173.4,	-171.7,	-28.6,
31	10.0,	122.4,	164.5,	-161.0,	-42.9,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	0.0,	0.0,	0.0,	0.0,	0.0,	34	0.0,	0.0,	0.0,	0.0,	0.0,
35	0.0,	0.0,	0.0,	0.0,	0.0,	36	10.0,	168.1,	176.0,	-105.7,	-87.9,

*** AERMOD - VERSION 15181 *** *** PM10 exhaust only Tier IV ***
05/08/16
*** AERMET - VERSION 14134 *** *** ***
16:58:03

PAGE 18
**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: SFQ5F01F

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-84.8,	-85.4,	2	10.0,	177.0,	158.8,	-64.3,	-84.0,
3	10.0,	173.4,	142.7,	-42.0,	-80.1,	4	10.0,	164.5,	122.4,	-18.3,	-73.8,
5	10.0,	150.6,	98.3,	5.9,	-65.2,	6	10.0,	162.1,	117.8,	6.6,	-54.7,
7	10.0,	172.0,	139.0,	4.5,	-42.5,	8	10.0,	176.7,	155.9,	2.3,	-29.0,
9	10.0,	176.0,	168.1,	0.0,	-14.6,	10	10.0,	170.0,	175.2,	-2.3,	0.2,
11	10.0,	158.8,	177.0,	-4.5,	15.0,	12	10.0,	142.7,	173.4,	-6.6,	29.4,
13	10.0,	122.4,	164.5,	-8.4,	42.9,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	0.0,	0.0,	0.0,	0.0,	0.0,	16	10.0,	139.0,	172.0,	-43.5,	74.0,
17	10.0,	155.9,	176.7,	-59.4,	80.3,	18	10.0,	168.1,	176.0,	-73.4,	84.1,
19	10.0,	175.2,	170.0,	-85.2,	85.4,	20	10.0,	177.0,	158.8,	-94.4,	84.0,
21	10.0,	173.4,	142.7,	-100.8,	80.1,	22	10.0,	164.5,	122.4,	-104.0,	73.8,
23	10.0,	150.6,	98.3,	-104.2,	65.2,	24	10.0,	162.1,	117.8,	-124.4,	54.7,
25	10.0,	172.0,	139.0,	-143.5,	42.5,	26	10.0,	176.7,	155.9,	-158.2,	29.0,
27	10.0,	176.0,	168.1,	-168.2,	14.6,	28	10.0,	170.0,	175.2,	-173.0,	-0.2,
29	10.0,	158.8,	177.0,	-172.5,	-15.0,	30	10.0,	142.7,	173.4,	-166.8,	-29.4,
31	10.0,	122.4,	164.5,	-156.1,	-42.9,	32	0.0,	0.0,	0.0,	0.0,	0.0,
33	0.0,	0.0,	0.0,	0.0,	0.0,	34	10.0,	139.0,	172.0,	-128.5,	-74.0,
35	10.0,	155.9,	176.7,	-117.3,	-80.3,	36	10.0,	168.1,	176.0,	-102.6,	-84.1,

SOURCE ID: SFQ5F01G

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	10.0,	175.2,	170.0,	-74.1,	-73.7,	2	10.0,	177.0,	158.8,	-55.9,	-70.7,
3	10.0,	173.4,	142.7,	-35.9,	-65.6,	4	10.0,	164.5,	122.4,	-14.9,	-58.4,
5	10.0,	150.6,	98.3,	6.6,	-49.5,	6	10.0,	162.1,	117.8,	4.5,	-39.1,
7	10.0,	172.0,	139.0,	-0.2,	-27.5,	8	10.0,	176.7,	155.9,	-5.0,	-15.0,
9	10.0,	176.0,	168.1,	-9.6,	-2.1,	10	10.0,	170.0,	175.2,	-13.9,	10.9,
11	10.0,	158.8,	177.0,	-17.8,	23.5,	12	10.0,	142.7,	173.4,	-21.1,	35.4,
13	10.0,	122.4,	164.5,	-23.8,	46.3,	14	0.0,	0.0,	0.0,	0.0,	0.0,
15	10.0,	117.8,	162.1,	-42.0,	63.5,	16	10.0,	139.0,	172.0,	-58.6,	69.3,
17	10.0,	155.9,	176.7,	-73.3,	73.0,	18	10.0,	168.1,	176.0,	-85.9,	74.5,
19	10.0,	175.2,	170.0,	-95.8,	73.7,	20	10.0,	177.0,	158.8,	-102.9,	70.7,
21	10.0,	173.4,	142.7,	-106.8,	65.6,	22	10.0,	164.5,	122.4,	-107.5,	58.4,
23	10.0,	150.6,	98.3,	-104.9,	49.5,	24	10.0,	162.1,	117.8,	-122.4,	39.1,
25	10.0,	172.0,	139.0,	-138.8,	27.5,	26	10.0,	176.7,	155.9,	-151.0,	15.0,
27	10.0,	176.0,	168.1,	-158.6,	2.1,	28	10.0,	170.0,	175.2,	-161.4,	-10.9,

```
                                                HR Attachment A
   29   10.0,  158.8,  177.0, -159.2,  -23.5,     30   10.0,  142.7,  173.4, -152.3,  -35.4,
   31   10.0,  122.4,  164.5, -140.7,  -46.3,     32    0.0,    0.0,    0.0,    0.0,    0.0,
   33   10.0,  117.8,  162.1, -120.1,  -63.5,     34   10.0,  139.0,  172.0, -113.5,  -69.3,
   35   10.0,  155.9,  176.7, -103.4,  -73.0,     36   10.0,  168.1,  176.0,  -90.1,  -74.5,

 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                    ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                            ***
   16:58:03

   PAGE  19
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                         *** DISCRETE CARTESIAN RECEPTORS ***
                                       (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                     (METERS)

     ( 468493.9, 3780990.1,       1.5,       0.0,       0.0);         ( 468554.5, 3780910.6,       1.5,       0.0,
     0.0);
     ( 468615.1, 3780831.1,       1.5,       0.0,       0.0);         ( 468675.8, 3780751.5,       1.5,       0.0,
     0.0);
     ( 468701.5, 3780717.7,       1.5,       0.0,       0.0);         ( 468655.1, 3780683.8,       1.5,       0.0,
     0.0);
     ( 468574.3, 3780624.9,       1.5,       0.0,       0.0);         ( 468493.6, 3780565.9,       1.5,       0.0,
     0.0);
     ( 468412.8, 3780506.9,       1.5,       0.0,       0.0);         ( 468405.1, 3780501.3,       1.5,       0.0,
     0.0);
     ( 468349.6, 3780572.7,       1.5,       0.0,       0.0);         ( 468288.3, 3780651.7,       1.5,       0.0,
     0.0);
     ( 468226.9, 3780730.7,       1.5,       0.0,       0.0);         ( 468202.4, 3780762.3,       1.5,       0.0,
     0.0);
     ( 468249.6, 3780799.2,       1.5,       0.0,       0.0);         ( 468328.4, 3780860.8,       1.5,       0.0,
     0.0);
     ( 468407.2, 3780922.4,       1.5,       0.0,       0.0);         ( 468486.0, 3780984.0,       1.5,       0.0,
     0.0);
     ( 468512.0, 3781131.2,       1.5,       0.0,       0.0);         ( 468572.7, 3781051.7,       1.5,       0.0,
     0.0);
     ( 468633.3, 3780972.2,       1.5,       0.0,       0.0);         ( 468693.9, 3780892.7,       1.5,       0.0,
     0.0);
     ( 468754.5, 3780813.1,       1.5,       0.0,       0.0);         ( 468815.2, 3780733.6,       1.5,       0.0,
     0.0);
     ( 468843.0, 3780697.2,       1.5,       0.0,       0.0);         ( 468799.2, 3780665.2,       1.5,       0.0,
     0.0);
     ( 468718.4, 3780606.3,       1.5,       0.0,       0.0);         ( 468637.7, 3780547.3,       1.5,       0.0,
     0.0);
     ( 468556.9, 3780488.3,       1.5,       0.0,       0.0);         ( 468476.1, 3780429.4,       1.5,       0.0,
     0.0);
     ( 468395.4, 3780370.4,       1.5,       0.0,       0.0);         ( 468385.6, 3780363.3,       1.5,       0.0,
     0.0);
     ( 468331.7, 3780432.7,       1.5,       0.0,       0.0);         ( 468270.4, 3780511.7,       1.5,       0.0,
     0.0);
     ( 468209.0, 3780590.7,       1.5,       0.0,       0.0);         ( 468147.7, 3780669.7,       1.5,       0.0,
     0.0);
     ( 468086.4, 3780748.7,       1.5,       0.0,       0.0);         ( 468062.3, 3780779.7,       1.5,       0.0,
     0.0);
     ( 468110.1, 3780817.1,       1.5,       0.0,       0.0);         ( 468188.9, 3780878.7,       1.5,       0.0,
     0.0);
     ( 468267.7, 3780940.2,       1.5,       0.0,       0.0);         ( 468346.5, 3781001.8,       1.5,       0.0,
     0.0);
     ( 468425.2, 3781063.4,       1.5,       0.0,       0.0);         ( 468504.0, 3781125.0,       1.5,       0.0,
     0.0);
     ( 468566.5, 3781554.6,       1.5,       0.0,       0.0);         ( 468657.5, 3781435.3,       1.5,       0.0,
     0.0);
     ( 468687.8, 3781395.6,       1.5,       0.0,       0.0);         ( 468687.8, 3781395.6,       1.5,       0.0,
     0.0);
     ( 468718.1, 3781355.7,       1.5,       0.0,       0.0);         ( 468778.7, 3781276.2,       1.5,       0.0,
     0.0);
```

```
( 468809.0, 3781236.5,       1.5,       0.0,       0.0);         ( 468839.3, 3781196.7,       1.5,       0.0,
0.0);
( 468869.6, 3781157.0,       1.5,       0.0,       0.0);         ( 468869.7, 3781156.9,       1.5,       0.0,
0.0);
( 468900.0, 3781117.2,       1.5,       0.0,       0.0);         ( 468930.3, 3781077.4,       1.5,       0.0,
0.0);
( 468960.6, 3781037.7,       1.5,       0.0,       0.0);         ( 469021.2, 3780958.1,       1.5,       0.0,
0.0);
( 469051.6, 3780918.4,       1.5,       0.0,       0.0);         ( 469112.1, 3780838.9,       1.5,       0.0,
0.0);
( 469112.2, 3780838.8,       1.5,       0.0,       0.0);         ( 469142.5, 3780799.1,       1.5,       0.0,
0.0);
( 469172.8, 3780759.3,       1.5,       0.0,       0.0);         ( 469203.1, 3780719.6,       1.5,       0.0,
0.0);
( 469263.8, 3780640.0,       1.5,       0.0,       0.0);         ( 469267.2, 3780635.5,       1.5,       0.0,
0.0);
( 469231.5, 3780609.4,       1.5,       0.0,       0.0);         ( 469069.9, 3780491.4,       1.5,       0.0,
0.0);
( 469029.6, 3780462.0,       1.5,       0.0,       0.0);         ( 468908.4, 3780373.5,       1.5,       0.0,
0.0);
( 468868.0, 3780344.0,       1.5,       0.0,       0.0);         ( 468787.3, 3780285.1,       1.5,       0.0,
0.0);
( 468746.9, 3780255.6,       1.5,       0.0,       0.0);         ( 468625.7, 3780167.1,       1.5,       0.0,
0.0);
( 468585.3, 3780137.7,       1.5,       0.0,       0.0);         ( 468545.0, 3780108.2,       1.5,       0.0,
0.0);
( 468423.8, 3780019.7,       1.5,       0.0,       0.0);         ( 468383.4, 3779990.2,       1.5,       0.0,
0.0);
( 468327.3, 3779949.3,       1.5,       0.0,       0.0);         ( 468308.6, 3779973.3,       1.5,       0.0,
0.0);
( 468277.9, 3780012.8,       1.5,       0.0,       0.0);         ( 468277.9, 3780012.9,       1.5,       0.0,
0.0);
( 468277.9, 3780012.9,       1.5,       0.0,       0.0);         ( 468247.3, 3780052.3,       1.5,       0.0,
0.0);
( 468216.6, 3780091.9,       1.5,       0.0,       0.0);         ( 468185.9, 3780131.3,       1.5,       0.0,
0.0);
( 468155.3, 3780170.8,       1.5,       0.0,       0.0);         ( 468155.3, 3780170.8,       1.5,       0.0,
0.0);
( 468155.2, 3780170.9,       1.5,       0.0,       0.0);         ( 468063.3, 3780289.3,       1.5,       0.0,
0.0);
*** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
05/08/16
*** AERMET - VERSION  14134 ***   ***                                                                    ***
16:58:03

PAGE  20
**MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                   *** DISCRETE CARTESIAN RECEPTORS ***
                              (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                              (METERS)

( 468032.6, 3780328.8,       1.5,       0.0,       0.0);         ( 468001.9, 3780368.2,       1.5,       0.0,
0.0);
( 467971.3, 3780407.7,       1.5,       0.0,       0.0);         ( 467971.2, 3780407.8,       1.5,       0.0,
0.0);
( 467909.9, 3780486.7,       1.5,       0.0,       0.0);         ( 467909.9, 3780486.7,       1.5,       0.0,
0.0);
( 467909.9, 3780486.8,       1.5,       0.0,       0.0);         ( 467879.3, 3780526.2,       1.5,       0.0,
0.0);
( 467848.6, 3780565.8,       1.5,       0.0,       0.0);         ( 467817.9, 3780605.2,       1.5,       0.0,
0.0);
( 467787.3, 3780644.7,       1.5,       0.0,       0.0);         ( 467787.3, 3780644.7,       1.5,       0.0,
0.0);
( 467787.2, 3780644.8,       1.5,       0.0,       0.0);         ( 467695.3, 3780763.2,       1.5,       0.0,
0.0);
( 467664.6, 3780802.7,       1.5,       0.0,       0.0);         ( 467641.9, 3780831.9,       1.5,       0.0,
```

```
     0.0);
     ( 467652.1, 3780839.9,       1.5,       0.0,       0.0);         ( 467691.6, 3780870.7,       1.5,       0.0,
     0.0);
     ( 467770.3, 3780932.3,       1.5,       0.0,       0.0);         ( 467770.3, 3780932.3,       1.5,       0.0,
     0.0);
     ( 467809.7, 3780963.1,       1.5,       0.0,       0.0);         ( 467849.1, 3780993.8,       1.5,       0.0,
     0.0);
     ( 467849.2, 3780993.9,       1.5,       0.0,       0.0);         ( 467888.5, 3781024.6,       1.5,       0.0,
     0.0);
     ( 467927.8, 3781055.4,       1.5,       0.0,       0.0);         ( 467927.9, 3781055.5,       1.5,       0.0,
     0.0);
     ( 467927.9, 3781055.5,       1.5,       0.0,       0.0);         ( 468085.4, 3781178.7,       1.5,       0.0,
     0.0);
     ( 468085.5, 3781178.7,       1.5,       0.0,       0.0);         ( 468164.2, 3781240.2,       1.5,       0.0,
     0.0);
     ( 468164.3, 3781240.3,       1.5,       0.0,       0.0);         ( 468203.6, 3781270.9,       1.5,       0.0,
     0.0);
     ( 468243.1, 3781301.8,       1.5,       0.0,       0.0);         ( 468243.1, 3781301.8,       1.5,       0.0,
     0.0);
     ( 468400.6, 3781424.9,       1.5,       0.0,       0.0);         ( 468400.7, 3781425.0,       1.5,       0.0,
     0.0);
     ( 468479.5, 3781486.5,       1.5,       0.0,       0.0);         ( 468518.8, 3781517.3,       1.5,       0.0,
     0.0);
     ( 468558.2, 3781548.0,       1.5,       0.0,       0.0);         ( 468558.2, 3781548.0,       1.5,       0.0,
     0.0);
     ( 468558.3, 3781548.1,       1.5,       0.0,       0.0);         ( 467770.3, 3780932.3,       1.5,       0.0,
     0.0);
     ( 467809.7, 3780963.1,       1.5,       0.0,       0.0);         ( 467849.1, 3780993.8,       1.5,       0.0,
     0.0);
     ( 467849.2, 3780993.9,       1.5,       0.0,       0.0);         ( 467888.5, 3781024.6,       1.5,       0.0,
     0.0);
     ( 467927.8, 3781055.4,       1.5,       0.0,       0.0);         ( 467927.9, 3781055.5,       1.5,       0.0,
     0.0);
     ( 468006.7, 3781117.1,       1.5,       0.0,       0.0);         ( 468085.5, 3781178.7,       1.5,       0.0,
     0.0);
     ( 468164.2, 3781240.2,       1.5,       0.0,       0.0);         ( 468164.3, 3781240.3,       1.5,       0.0,
     0.0);
     ( 468203.6, 3781270.9,       1.5,       0.0,       0.0);         ( 468243.1, 3781301.8,       1.5,       0.0,
     0.0);
     ( 468321.9, 3781363.4,       1.5,       0.0,       0.0);         ( 468400.7, 3781425.0,       1.5,       0.0,
     0.0);
     ( 468479.5, 3781486.5,       1.5,       0.0,       0.0);         ( 468518.8, 3781517.3,       1.5,       0.0,
     0.0);
     ( 468558.2, 3781548.0,       1.5,       0.0,       0.0);         ( 468558.3, 3781548.1,       1.5,       0.0,
     0.0);
     ( 468257.9, 3780783.2,       0.0,       0.0,       0.0);         ( 468454.4, 3780936.9,       0.0,       0.0,
     0.0);
     ( 468611.9, 3780737.6,       0.0,       0.0,       0.0);         ( 468413.5, 3780583.3,       0.0,       0.0,
     0.0);
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                                  ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                            ***
   16:58:03

   PAGE  21
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                    (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
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                                                HR Attachment A
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1
1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                       METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2010   1  1  1
                                                          AND END DATE: 2011  12 31 24

                  NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA
FILE.


                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                            (METERS/SEC)

                                                     1.54,   3.09,   5.14,   8.23,  10.80,
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
   16:58:03

   PAGE  22
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                     *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.SFC                    Met Version:
14134
   Profile file:   C:\Users\ryan_000\OneDrive\LDNWOR~1\METDAT~1\SANBER~1\SNBO8.PFL
   Surface format: FREE

   Profile format: FREE

   Surface station no.:        0                  Upper air station no.:     3190
                  Name: UNKNOWN                                     Name: UNKNOWN
                  Year:   2007                                      Year:   2007

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT  REF TA
  HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - -
 07 01 01   1 01   -0.5  0.030 -9.000 -9.000 -999.   12.      4.4  0.32   1.00   1.00    0.50   27.    9.1  279.9
 5.5
 07 01 01   1 02   -0.5  0.030 -9.000 -9.000 -999.   12.      4.3  0.32   1.00   1.00    0.50    7.    9.1  279.2
 5.5
 07 01 01   1 03   -0.5  0.030 -9.000 -9.000 -999.   12.      4.3  0.32   1.00   1.00    0.50   97.    9.1  278.8
 5.5
 07 01 01   1 04   -0.7  0.030 -9.000 -9.000 -999.   12.      3.1  0.32   1.00   1.00    0.50  148.    9.1  278.1
 5.5
 07 01 01   1 05   -2.4  0.054 -9.000 -9.000 -999.   30.      5.5  0.32   1.00   1.00    0.90   87.    9.1  278.1
 5.5
 07 01 01   1 06   -1.7  0.054 -9.000 -9.000 -999.   30.      7.8  0.32   1.00   1.00    0.90  208.    9.1  277.0
 5.5
 07 01 01   1 07   -1.7  0.054 -9.000 -9.000 -999.   30.      7.8  0.32   1.00   1.00    0.90  156.    9.1  277.5
 5.5
 07 01 01   1 08   -1.7  0.054 -9.000 -9.000 -999.   30.      7.8  0.32   1.00   0.52    0.90   60.    9.1  277.5
 5.5
 07 01 01   1 09   34.6  0.390  0.621  0.005  241.  585.   -149.6  0.32   1.00   0.31    3.10  264.    9.1  282.5
 5.5
 07 01 01   1 10   78.0  0.267  1.066  0.005  541.  341.    -21.3  0.32   1.00   0.24    1.80  242.    9.1  289.2
 5.5
```

```
 07 01 01   1 11  112.9  0.612  1.395  0.019  839. 1149.   -176.9  0.32   1.00   0.21    4.90   82.    9.1  290.4
 5.5
 07 01 01   1 12  130.3  0.615  1.611  0.020 1120. 1158.   -155.8  0.32   1.00   0.20    4.90   74.    9.1  290.9
 5.5
 07 01 01   1 13  128.2  0.671  1.662  0.015 1250. 1315.   -204.9  0.32   1.00   0.20    5.40   59.    9.1  290.9
 5.5
 07 01 01   1 14  107.5  0.712  1.575  0.007 1267. 1439.   -292.1  0.32   1.00   0.22    5.80   58.    9.1  291.4
 5.5
 07 01 01   1 15   68.1  0.602  1.356  0.021 1277. 1137.   -279.3  0.32   1.00   0.25    4.90   40.    9.1  291.4
 5.5
 07 01 01   1 16   18.1  0.438  0.872  0.021 1278.  724.   -405.7  0.32   1.00   0.34    3.60  312.    9.1  292.0
 5.5
 07 01 01   1 17  -25.8  0.263 -9.000 -9.000 -999.  353.     61.6  0.32   1.00   0.63    2.70  342.    9.1  290.9
 5.5
 07 01 01   1 18   -4.9  0.077 -9.000 -9.000 -999.  114.      8.1  0.32   1.00   1.00    1.30  256.    9.1  289.2
 5.5
 07 01 01   1 19   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1  0.32   1.00   1.00    1.30  191.    9.1  289.9
 5.5
 07 01 01   1 20   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1  0.32   1.00   1.00    1.30  197.    9.1  289.9
 5.5
 07 01 01   1 21   -4.9  0.077 -9.000 -9.000 -999.   52.      8.1  0.32   1.00   1.00    1.30  190.    9.1  289.9
 5.5
 07 01 01   1 22   -2.4  0.054 -9.000 -9.000 -999.   30.      5.6  0.32   1.00   1.00    0.90  188.    9.1  289.2
 5.5
 07 01 01   1 23   -9.5  0.107 -9.000 -9.000 -999.   84.     11.3  0.32   1.00   1.00    1.80  162.    9.1  289.9
 5.5
 07 01 01   1 24   -9.5  0.107 -9.000 -9.000 -999.   84.     11.3  0.32   1.00   1.00    1.80   42.    9.1  289.2
 5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 07 01 01 01    5.5 0 -999.  -99.00   279.9   99.0  -99.00  -99.00
 07 01 01 01    9.1 1   27.    0.50  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                            ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
   16:58:03

   PAGE  23
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   2 YEARS FOR SOURCE GROUP: ALL
 ***
                                 INCLUDING SOURCE(S):     Q4OAY00D    , SFQ5F000    , SFQ5F001    , SFQ5F002    ,
SFQ5F003    ,
                 SFQ5F004    , SFQ5F005    , SFQ5F006    , SFQ5F007    , SFQ5F008    , SFQ5F009    , SFQ5F00A    ,
SFQ5F00B    ,
                 SFQ5F00C    , SFQ5F00D    , SFQ5F00E    , SFQ5F00F    , SFQ5F00G    , SFQ5F00H    , SFQ5F00I    ,
SFQ5F00J    ,
                 SFQ5F00K    , SFQ5F00L    , SFQ5F00M    , SFQ5F00N    , SFQ5F00O    , SFQ5F00P    , SFQ5F00Q    ,
 . . .      ,

                                                  *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                             ** CONC OF PM10     IN MICROGRAMS/M**3                        **

      X-COORD (M)   Y-COORD (M)        CONC                         X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - -
        468493.90    3780990.10       0.00056                         468554.50    3780910.60       0.00095

        468615.10    3780831.10       0.00079                         468675.80    3780751.50       0.00046

        468701.50    3780717.70       0.00040                         468655.10    3780683.80       0.00048
```

468574.30	3780624.90	0.00064	468493.60	3780565.90	0.00068
468412.80	3780506.90	0.00059	468405.10	3780501.30	0.00058
468349.60	3780572.70	0.00105	468288.30	3780651.70	0.00113
468226.90	3780730.70	0.00074	468202.40	3780762.30	0.00062
468249.60	3780799.20	0.00076	468328.40	3780860.80	0.00082
468407.20	3780922.40	0.00069	468486.00	3780984.00	0.00057
468512.00	3781131.20	0.00030	468572.70	3781051.70	0.00046
468633.30	3780972.20	0.00061	468693.90	3780892.70	0.00051
468754.50	3780813.10	0.00035	468815.20	3780733.60	0.00026
468843.00	3780697.20	0.00023	468799.20	3780665.20	0.00027
468718.40	3780606.30	0.00034	468637.70	3780547.30	0.00040
468556.90	3780488.30	0.00041	468476.10	3780429.40	0.00036
468395.40	3780370.40	0.00032	468385.60	3780363.30	0.00032
468331.70	3780432.70	0.00047	468270.40	3780511.70	0.00064
468209.00	3780590.70	0.00063	468147.70	3780669.70	0.00049
468086.40	3780748.70	0.00038	468062.30	3780779.70	0.00034
468110.10	3780817.10	0.00040	468188.90	3780878.70	0.00046
468267.70	3780940.20	0.00044	468346.50	3781001.80	0.00040
468425.20	3781063.40	0.00035	468504.00	3781125.00	0.00030
468566.50	3781554.60	0.00011	468657.50	3781435.30	0.00015
468687.80	3781395.60	0.00017	468687.80	3781395.60	0.00017
468718.10	3781355.70	0.00019	468778.70	3781276.20	0.00025
468809.00	3781236.50	0.00027	468839.30	3781196.70	0.00027
468869.60	3781157.00	0.00026	468869.70	3781156.90	0.00026
468900.00	3781117.20	0.00024	468930.30	3781077.40	0.00022
468960.60	3781037.70	0.00021	469021.20	3780958.10	0.00016
469051.60	3780918.40	0.00014	469112.10	3780838.90	0.00012
469112.20	3780838.80	0.00012	469142.50	3780799.10	0.00011
469172.80	3780759.30	0.00010	469203.10	3780719.60	0.00009
469263.80	3780640.00	0.00008	469267.20	3780635.50	0.00008
469231.50	3780609.40	0.00009	469069.90	3780491.40	0.00011
469029.60	3780462.00	0.00012	468908.40	3780373.50	0.00014
468868.00	3780344.00	0.00014	468787.30	3780285.10	0.00015

468746.90	3780255.60	0.00015	468625.70	3780167.10	0.00014
468585.30	3780137.70	0.00014	468545.00	3780108.20	0.00013
468423.80	3780019.70	0.00013	468383.40	3779990.20	0.00012
468327.30	3779949.30	0.00012	468308.60	3779973.30	0.00013

```
*** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                  ***
   16:58:03

   PAGE  24
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   2 YEARS FOR SOURCE GROUP: ALL
 ***
                                 INCLUDING SOURCE(S):     Q4OAY00D    , SFQ5F000    , SFQ5F001    , SFQ5F002    ,
SFQ5F003    ,
                SFQ5F004    , SFQ5F005    , SFQ5F006    , SFQ5F007    , SFQ5F008    , SFQ5F009    , SFQ5F00A    ,
SFQ5F00B    ,
                SFQ5F00C    , SFQ5F00D    , SFQ5F00E    , SFQ5F00F    , SFQ5F00G    , SFQ5F00H    , SFQ5F00I    ,
SFQ5F00J    ,
                SFQ5F00K    , SFQ5F00L    , SFQ5F00M    , SFQ5F00N    , SFQ5F00O    , SFQ5F00P    , SFQ5F00Q    ,
. . .      ,

                                         *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                     ** CONC OF PM10     IN MICROGRAMS/M**3                          **
```

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
468277.90	3780012.80	0.00015	468277.90	3780012.90	0.00015
468277.90	3780012.90	0.00015	468247.30	3780052.30	0.00017
468216.60	3780091.90	0.00019	468185.90	3780131.30	0.00021
468155.30	3780170.80	0.00023	468155.30	3780170.80	0.00023
468155.20	3780170.90	0.00023	468063.30	3780289.30	0.00026
468032.60	3780328.80	0.00027	468001.90	3780368.20	0.00027
467971.30	3780407.70	0.00027	467971.20	3780407.80	0.00027
467909.90	3780486.70	0.00024	467909.90	3780486.70	0.00024
467909.90	3780486.80	0.00024	467879.30	3780526.20	0.00022
467848.60	3780565.80	0.00020	467817.90	3780605.20	0.00019
467787.30	3780644.70	0.00017	467787.30	3780644.70	0.00017
467787.20	3780644.80	0.00017	467695.30	3780763.20	0.00014
467664.60	3780802.70	0.00013	467641.90	3780831.90	0.00013
467652.10	3780839.90	0.00013	467691.60	3780870.70	0.00014
467770.30	3780932.30	0.00015	467770.30	3780932.30	0.00015
467809.70	3780963.10	0.00016	467849.10	3780993.80	0.00016
467849.20	3780993.90	0.00016	467888.50	3781024.60	0.00017

467927.80	3781055.40	0.00017	467927.90	3781055.50	0.00017
467927.90	3781055.50	0.00017	468085.40	3781178.70	0.00017
468085.50	3781178.70	0.00017	468164.20	3781240.20	0.00017
468164.30	3781240.30	0.00017	468203.60	3781270.90	0.00016
468243.10	3781301.80	0.00015	468243.10	3781301.80	0.00015
468400.60	3781424.90	0.00013	468400.70	3781425.00	0.00013
468479.50	3781486.50	0.00012	468518.80	3781517.30	0.00012
468558.20	3781548.00	0.00011	468558.20	3781548.00	0.00011
468558.30	3781548.10	0.00011	467770.30	3780932.30	0.00015
467809.70	3780963.10	0.00016	467849.10	3780993.80	0.00016
467849.20	3780993.90	0.00016	467888.50	3781024.60	0.00017
467927.80	3781055.40	0.00017	467927.90	3781055.50	0.00017
468006.70	3781117.10	0.00017	468085.50	3781178.70	0.00017
468164.20	3781240.20	0.00017	468164.30	3781240.30	0.00017
468203.60	3781270.90	0.00016	468243.10	3781301.80	0.00015
468321.90	3781363.40	0.00014	468400.70	3781425.00	0.00013
468479.50	3781486.50	0.00012	468518.80	3781517.30	0.00012
468558.20	3781548.00	0.00011	468558.30	3781548.10	0.00011
468257.90	3780783.20	0.00084	468454.40	3780936.90	0.00073
468611.90	3780737.60	0.00066	468413.50	3780583.30	0.00107

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*** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
    05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
   16:58:03

   PAGE  25
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                            *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL
 ***
                                INCLUDING SOURCE(S):     Q4OAY00D    , SFQ5F000    , SFQ5F001    , SFQ5F002    ,
SFQ5F003    ,
                SFQ5F004    , SFQ5F005    , SFQ5F006    , SFQ5F007    , SFQ5F008    , SFQ5F009    , SFQ5F00A    ,
SFQ5F00B    ,
                SFQ5F00C    , SFQ5F00D    , SFQ5F00E    , SFQ5F00F    , SFQ5F00G    , SFQ5F00H    , SFQ5F00I    ,
SFQ5F00J    ,
                SFQ5F00K    , SFQ5F00L    , SFQ5F00M    , SFQ5F00N    , SFQ5F00O    , SFQ5F00P    , SFQ5F00Q    ,
. . .      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                      ** CONC OF PM10     IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
(YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

- - - - - - - - -

468493.90	3780990.10	0.00694	(11070601)	468554.50	3780910.60	0.00790	(10051222)
468615.10	3780831.10	0.00796	(11070624)	468675.80	3780751.50	0.00664	(11061006)
468701.50	3780717.70	0.00646	(11090519)	468655.10	3780683.80	0.00719	(10020904)
468574.30	3780624.90	0.00948	(11042522)	468493.60	3780565.90	0.01575	(11011119)
468412.80	3780506.90	0.01118	(11102205)	468405.10	3780501.30	0.01086	(11101905)
468349.60	3780572.70	0.01043	(10020517)	468288.30	3780651.70	0.00964	(10032021)
468226.90	3780730.70	0.00796	(10101207)	468202.40	3780762.30	0.00801	(11101222)
468249.60	3780799.20	0.01034	(10121817)	468328.40	3780860.80	0.01233	(10100124)
468407.20	3780922.40	0.00882	(11032006)	468486.00	3780984.00	0.00699	(11070601)
468512.00	3781131.20	0.00549	(11090301)	468572.70	3781051.70	0.00615	(11112317)
468633.30	3780972.20	0.00650	(11082722)	468693.90	3780892.70	0.00670	(10121521)
468754.50	3780813.10	0.00589	(11110219)	468815.20	3780733.60	0.00533	(11061606)
468843.00	3780697.20	0.00532	(11102603)	468799.20	3780665.20	0.00562	(11091106)
468718.40	3780606.30	0.00669	(10121517)	468637.70	3780547.30	0.00846	(10102322)
468556.90	3780488.30	0.01200	(10012218)	468476.10	3780429.40	0.00996	(11111806)
468395.40	3780370.40	0.00829	(11102205)	468385.60	3780363.30	0.00816	(11101905)
468331.70	3780432.70	0.00811	(11033103)	468270.40	3780511.70	0.00815	(10122403)
468209.00	3780590.70	0.00782	(10032021)	468147.70	3780669.70	0.00657	(11080105)
468086.40	3780748.70	0.00641	(11112022)	468062.30	3780779.70	0.00635	(11101222)
468110.10	3780817.10	0.00722	(11010719)	468188.90	3780878.70	0.00960	(11082705)
468267.70	3780940.20	0.00922	(10103004)	468346.50	3781001.80	0.00740	(10092322)
468425.20	3781063.40	0.00656	(11112717)	468504.00	3781125.00	0.00550	(11090301)
468566.50	3781554.60	0.00452	(11122918)	468657.50	3781435.30	0.00483	(11060123)
468687.80	3781395.60	0.00472	(11031122)	468687.80	3781395.60	0.00472	(11031122)
468718.10	3781355.70	0.00512	(11112317)	468778.70	3781276.20	0.00506	(10082222)
468809.00	3781236.50	0.00536	(11111520)	468839.30	3781196.70	0.00536	(10081624)
468869.60	3781157.00	0.00564	(11102101)	468869.70	3781156.90	0.00564	(11102101)
468900.00	3781117.20	0.00551	(11022122)	468930.30	3781077.40	0.00544	(10121521)
468960.60	3781037.70	0.00557	(11100222)	469021.20	3780958.10	0.00508	(11082023)
469051.60	3780918.40	0.00516	(11110219)	469112.10	3780838.90	0.00476	(11040523)
469112.20	3780838.80	0.00476	(11040523)	469142.50	3780799.10	0.00473	(11061006)
469172.80	3780759.30	0.00448	(10121519)	469203.10	3780719.60	0.00455	(11090519)
469263.80	3780640.00	0.00423	(11010304)	469267.20	3780635.50	0.00421	(11010304)

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        469231.50   3780609.40        0.00433  (11100405)                469069.90   3780491.40        0.00493
(11111804)
        469029.60   3780462.00        0.00519  (11070605)                468908.40   3780373.50        0.00588
(10101505)
        468868.00   3780344.00        0.00600  (11031207)                468787.30   3780285.10        0.00464
(10080904)
        468746.90   3780255.60        0.00768  (11082621)                468625.70   3780167.10        0.00754
(10111823)
        468585.30   3780137.70        0.00725  (10082201)                468545.00   3780108.20        0.00703
(11100823)
        468423.80   3780019.70        0.00633  (11031607)                468383.40   3779990.20        0.00601
(10101205)
        468327.30   3779949.30        0.00579  (11101905)                468308.60   3779973.30        0.00609
(10121618)
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
   16:58:03

   PAGE  26
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                            *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL
 ***
                                INCLUDING SOURCE(S):     Q4OAY00D    , SFQ5F000    , SFQ5F001    , SFQ5F002    ,
SFQ5F003    ,
                SFQ5F004    , SFQ5F005    , SFQ5F006    , SFQ5F007    , SFQ5F008    , SFQ5F009    , SFQ5F00A    ,
SFQ5F00B    ,
                SFQ5F00C    , SFQ5F00D    , SFQ5F00E    , SFQ5F00F    , SFQ5F00G    , SFQ5F00H    , SFQ5F00I    ,
SFQ5F00J    ,
                SFQ5F00K    , SFQ5F00L    , SFQ5F00M    , SFQ5F00N    , SFQ5F00O    , SFQ5F00P    , SFQ5F00Q    ,
. . .      ,

                                         *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                     ** CONC OF PM10     IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
(YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - -
        468277.90   3780012.80        0.00621  (11112017)                468277.90   3780012.90        0.00621
(11112017)
        468277.90   3780012.90        0.00621  (11112017)                468247.30   3780052.30        0.00639
(11101107)
        468216.60   3780091.90        0.00637  (11033103)                468185.90   3780131.30        0.00639
(11120920)
        468155.30   3780170.80        0.00655  (10022002)                468155.30   3780170.80        0.00655
(10022002)
        468155.20   3780170.90        0.00655  (10022002)                468063.30   3780289.30        0.00666
(10122403)
        468032.60   3780328.80        0.00735  (11112722)                468001.90   3780368.20        0.00715
(10122122)
        467971.30   3780407.70        0.00702  (10110521)                467971.20   3780407.80        0.00701
(10110521)
        467909.90   3780486.70        0.00619  (10100807)                467909.90   3780486.70        0.00619
(10100807)
        467909.90   3780486.80        0.00618  (10100807)                467879.30   3780526.20        0.00589
(10121319)
        467848.60   3780565.80        0.00583  (10101406)                467817.90   3780605.20        0.00537
(11080105)
        467787.30   3780644.70        0.00559  (10032720)                467787.30   3780644.70        0.00559
(10032720)
        467787.20   3780644.80        0.00559  (10032720)                467695.30   3780763.20        0.00535
(11112022)
        467664.60   3780802.70        0.00528  (11101222)                467641.90   3780831.90        0.00497
(11103001)
```

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        467652.10   3780839.90        0.00501  (10081306)                467691.60   3780870.70        0.00532
(10122820)
        467770.30   3780932.30        0.00576  (10021721)                467770.30   3780932.30        0.00576
(10021721)
        467809.70   3780963.10        0.00596  (11111904)                467849.10   3780993.80        0.00626
(11111902)
        467849.20   3780993.90        0.00626  (11111902)                467888.50   3781024.60        0.00661
(10011517)
        467927.80   3781055.40        0.00661  (11013006)                467927.90   3781055.50        0.00662
(11013006)
        467927.90   3781055.50        0.00662  (11013006)                468085.40   3781178.70        0.00551
(10103004)
        468085.50   3781178.70        0.00551  (10103004)                468164.20   3781240.20        0.00664
(10091922)
        468164.30   3781240.30        0.00664  (10091922)                468203.60   3781270.90        0.00623
(10030404)
        468243.10   3781301.80        0.00579  (11110817)                468243.10   3781301.80        0.00579
(11110817)
        468400.60   3781424.90        0.00509  (11040121)                468400.70   3781425.00        0.00509
(11040121)
        468479.50   3781486.50        0.00494  (10031221)                468518.80   3781517.30        0.00484
(11052303)
        468558.20   3781548.00        0.00470  (11122918)                468558.20   3781548.00        0.00470
(11122918)
        468558.30   3781548.10        0.00469  (11122918)                467770.30   3780932.30        0.00576
(10021721)
        467809.70   3780963.10        0.00596  (11111904)                467849.10   3780993.80        0.00626
(11111902)
        467849.20   3780993.90        0.00626  (11111902)                467888.50   3781024.60        0.00661
(10011517)
        467927.80   3781055.40        0.00661  (11013006)                467927.90   3781055.50        0.00662
(11013006)
        468006.70   3781117.10        0.00701  (10071702)                468085.50   3781178.70        0.00551
(10103004)
        468164.20   3781240.20        0.00664  (10091922)                468164.30   3781240.30        0.00664
(10091922)
        468203.60   3781270.90        0.00623  (10030404)                468243.10   3781301.80        0.00579
(11110817)
        468321.90   3781363.40        0.00523  (10071703)                468400.70   3781425.00        0.00509
(11040121)
        468479.50   3781486.50        0.00494  (10031221)                468518.80   3781517.30        0.00484
(11052303)
        468558.20   3781548.00        0.00470  (11122918)                468558.30   3781548.10        0.00469
(11122918)
        468257.90   3780783.20        0.00977  (11010719)                468454.40   3780936.90        0.00796
(11122918)
        468611.90   3780737.60        0.00760  (11061006)                468413.50   3780583.30        0.01410
(10090422)
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
   16:58:03

   PAGE  27
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                            *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL
 ***
                                INCLUDING SOURCE(S):     Q4OAY00D    , SFQ5F000    , SFQ5F001    , SFQ5F002    ,
SFQ5F003    ,
                SFQ5F004    , SFQ5F005    , SFQ5F006    , SFQ5F007    , SFQ5F008    , SFQ5F009    , SFQ5F00A    ,
SFQ5F00B    ,
                SFQ5F00C    , SFQ5F00D    , SFQ5F00E    , SFQ5F00F    , SFQ5F00G    , SFQ5F00H    , SFQ5F00I    ,
SFQ5F00J    ,
                SFQ5F00K    , SFQ5F00L    , SFQ5F00M    , SFQ5F00N    , SFQ5F00O    , SFQ5F00P    , SFQ5F00Q    ,
. . .      ,
```

HR Attachment A
*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
468493.90	3780990.10	0.00142	(11032824)	468554.50	3780910.60	0.00244m	(11081524)
468615.10	3780831.10	0.00193	(11121424)	468675.80	3780751.50	0.00150	(11110524)
468701.50	3780717.70	0.00122	(11110524)	468655.10	3780683.80	0.00163	(11111224)
468574.30	3780624.90	0.00206	(11121924)	468493.60	3780565.90	0.00221	(11111824)
468412.80	3780506.90	0.00229m	(10123124)	468405.10	3780501.30	0.00218m	(10123124)
468349.60	3780572.70	0.00411	(11122624)	468288.30	3780651.70	0.00344	(11121924)
468226.90	3780730.70	0.00240	(11112424)	468202.40	3780762.30	0.00175m	(10121724)
468249.60	3780799.20	0.00269	(11111924)	468328.40	3780860.80	0.00287	(11110524)
468407.20	3780922.40	0.00191	(10012424)	468486.00	3780984.00	0.00146	(11032824)
468512.00	3781131.20	0.00085	(11101624)	468572.70	3781051.70	0.00125	(11112324)
468633.30	3780972.20	0.00187m	(11081524)	468693.90	3780892.70	0.00135m	(11081424)
468754.50	3780813.10	0.00107m	(11111524)	468815.20	3780733.60	0.00083	(11110524)
468843.00	3780697.20	0.00069	(11110524)	468799.20	3780665.20	0.00097	(11111224)
468718.40	3780606.30	0.00119	(11111224)	468637.70	3780547.30	0.00123	(11121924)
468556.90	3780488.30	0.00132	(11112424)	468476.10	3780429.40	0.00122	(11111824)
468395.40	3780370.40	0.00140m	(10123124)	468385.60	3780363.30	0.00133m	(10123124)
468331.70	3780432.70	0.00178	(11110624)	468270.40	3780511.70	0.00240	(11122624)
468209.00	3780590.70	0.00241	(11121924)	468147.70	3780669.70	0.00182	(11112424)
468086.40	3780748.70	0.00117	(11112424)	468062.30	3780779.70	0.00113	(11121924)
468110.10	3780817.10	0.00141	(11010724)	468188.90	3780878.70	0.00151	(11121224)
468267.70	3780940.20	0.00136	(11123024)	468346.50	3781001.80	0.00134	(10012424)
468425.20	3781063.40	0.00105	(11121124)	468504.00	3781125.00	0.00085	(11101624)
468566.50	3781554.60	0.00053	(10101224)	468657.50	3781435.30	0.00062	(11082124)
468687.80	3781395.60	0.00067m	(11081624)	468687.80	3781395.60	0.00067m	(11081624)
468718.10	3781355.70	0.00082	(11082224)	468778.70	3781276.20	0.00097m	(11081524)
468809.00	3781236.50	0.00109m	(11081524)	468839.30	3781196.70	0.00090m	(11083124)
468869.60	3781157.00	0.00116m	(11081424)	468869.70	3781156.90	0.00116m	(11081424)
468900.00	3781117.20	0.00103m	(11081424)	468930.30	3781077.40	0.00096m	(11081524)
468960.60	3781037.70	0.00071	(11080124)	469021.20	3780958.10	0.00060m	(11101124)
469051.60	3780918.40	0.00064m	(11111524)	469112.10	3780838.90	0.00053	

```
(11110524)
        469112.20   3780838.80        0.00053  (11110524)                469142.50   3780799.10        0.00043
(11090424)
        469172.80   3780759.30        0.00047  (10121524)                469203.10   3780719.60        0.00046
(10121524)
        469263.80   3780640.00        0.00030  (11111324)                469267.20   3780635.50        0.00030
(11111324)
        469231.50   3780609.40        0.00034m (10102124)                469069.90   3780491.40        0.00052
(11111224)
        469029.60   3780462.00        0.00049  (11110824)                468908.40   3780373.50        0.00052
(11030624)
        468868.00   3780344.00        0.00054  (11030624)                468787.30   3780285.10        0.00049
(11112324)
        468746.90   3780255.60        0.00061  (11112124)                468625.70   3780167.10        0.00056
(11122924)
        468585.30   3780137.70        0.00053  (11121224)                468545.00   3780108.20        0.00067
(10020124)
        468423.80   3780019.70        0.00096m (10123124)                468383.40   3779990.20        0.00091m
(10123124)
        468327.30   3779949.30        0.00060  (11110524)                468308.60   3779973.30        0.00069
(11031024)
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
   16:58:03

   PAGE  28
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                            *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL
 ***
                                INCLUDING SOURCE(S):     Q4OAY00D    , SFQ5F000    , SFQ5F001    , SFQ5F002    ,
SFQ5F003    ,
                SFQ5F004    , SFQ5F005    , SFQ5F006    , SFQ5F007    , SFQ5F008    , SFQ5F009    , SFQ5F00A    ,
SFQ5F00B    ,
                SFQ5F00C    , SFQ5F00D    , SFQ5F00E    , SFQ5F00F    , SFQ5F00G    , SFQ5F00H    , SFQ5F00I    ,
SFQ5F00J    ,
                SFQ5F00K    , SFQ5F00L    , SFQ5F00M    , SFQ5F00N    , SFQ5F00O    , SFQ5F00P    , SFQ5F00Q    ,
. . .      ,

                                        *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                    ** CONC OF PM10     IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
(YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - -
        468277.90   3780012.80        0.00085  (11031024)                468277.90   3780012.90        0.00085
(11031024)
        468277.90   3780012.90        0.00085  (11031024)                468247.30   3780052.30        0.00088
(11111724)
        468216.60   3780091.90        0.00101  (11110624)                468185.90   3780131.30        0.00097
(11122624)
        468155.30   3780170.80        0.00131  (11122624)                468155.30   3780170.80        0.00131
(11122624)
        468155.20   3780170.90        0.00131  (11122624)                468063.30   3780289.30        0.00121
(11012924)
        468032.60   3780328.80        0.00142  (11112724)                468001.90   3780368.20        0.00108
(10011724)
        467971.30   3780407.70        0.00130  (11121924)                467971.20   3780407.80        0.00130
(11121924)
        467909.90   3780486.70        0.00115  (10121324)                467909.90   3780486.70        0.00115
(10121324)
        467909.90   3780486.80        0.00115  (10121324)                467879.30   3780526.20        0.00092
(10121324)
        467848.60   3780565.80        0.00092m (10110924)                467817.90   3780605.20        0.00089
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(11013024)
        467787.30   3780644.70        0.00075  (11112424)                467787.30   3780644.70        0.00075
(11112424)
        467787.20   3780644.80        0.00075  (11112424)                467695.30   3780763.20        0.00072
(11031424)
        467664.60   3780802.70        0.00065  (11031424)                467641.90   3780831.90        0.00058m
(10121724)
        467652.10   3780839.90        0.00057m (10121724)                467691.60   3780870.70        0.00073
(11010724)
        467770.30   3780932.30        0.00076  (11010724)                467770.30   3780932.30        0.00076
(11010724)
        467809.70   3780963.10        0.00104  (11111924)                467849.10   3780993.80        0.00100
(11111924)
        467849.20   3780993.90        0.00100  (11111924)                467888.50   3781024.60        0.00077
(10112224)
        467927.80   3781055.40        0.00072  (11101624)                467927.90   3781055.50        0.00072
(11101624)
        467927.90   3781055.50        0.00072  (11101624)                468085.40   3781178.70        0.00059
(11121124)
        468085.50   3781178.70        0.00059  (11121124)                468164.20   3781240.20        0.00073
(11030424)
        468164.30   3781240.30        0.00073  (11030424)                468203.60   3781270.90        0.00069
(10030424)
        468243.10   3781301.80        0.00068  (10012424)                468243.10   3781301.80        0.00068
(10012424)
        468400.60   3781424.90        0.00050  (10120424)                468400.70   3781425.00        0.00050
(10120424)
        468479.50   3781486.50        0.00049  (10081724)                468518.80   3781517.30        0.00058
(10081724)
        468558.20   3781548.00        0.00055  (10081724)                468558.20   3781548.00        0.00055
(10081724)
        468558.30   3781548.10        0.00055  (10081724)                467770.30   3780932.30        0.00076
(11010724)
        467809.70   3780963.10        0.00104  (11111924)                467849.10   3780993.80        0.00100
(11111924)
        467849.20   3780993.90        0.00100  (11111924)                467888.50   3781024.60        0.00077
(10112224)
        467927.80   3781055.40        0.00072  (11101624)                467927.90   3781055.50        0.00072
(11101624)
        468006.70   3781117.10        0.00091  (10111524)                468085.50   3781178.70        0.00059
(11121124)
        468164.20   3781240.20        0.00073  (11030424)                468164.30   3781240.30        0.00073
(11030424)
        468203.60   3781270.90        0.00069  (10030424)                468243.10   3781301.80        0.00068
(10012424)
        468321.90   3781363.40        0.00049m (11041424)                468400.70   3781425.00        0.00050
(10120424)
        468479.50   3781486.50        0.00049  (10081724)                468518.80   3781517.30        0.00058
(10081724)
        468558.20   3781548.00        0.00055  (10081724)                468558.30   3781548.10        0.00055
(10081724)
        468257.90   3780783.20        0.00275  (11111924)                468454.40   3780936.90        0.00194
(11121124)
        468611.90   3780737.60        0.00204  (11110524)                468413.50   3780583.30        0.00331m
(10123124)
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                          ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
   16:58:03

   PAGE  29
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                   *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   2 YEARS ***


                                    ** CONC OF PM10     IN MICROGRAMS/M**3                          **
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```
NETWORK
GROUP ID                        AVERAGE CONC                RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE
GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- -

ALL       1ST HIGHEST VALUE IS       0.00113 AT (  468288.30,  3780651.70,     1.50,     0.00,    0.00)  DC

          2ND HIGHEST VALUE IS       0.00107 AT (  468413.50,  3780583.30,     0.00,     0.00,    0.00)  DC

          3RD HIGHEST VALUE IS       0.00105 AT (  468349.60,  3780572.70,     1.50,     0.00,    0.00)  DC

          4TH HIGHEST VALUE IS       0.00095 AT (  468554.50,  3780910.60,     1.50,     0.00,    0.00)  DC

          5TH HIGHEST VALUE IS       0.00084 AT (  468257.90,  3780783.20,     0.00,     0.00,    0.00)  DC

          6TH HIGHEST VALUE IS       0.00082 AT (  468328.40,  3780860.80,     1.50,     0.00,    0.00)  DC

          7TH HIGHEST VALUE IS       0.00079 AT (  468615.10,  3780831.10,     1.50,     0.00,    0.00)  DC

          8TH HIGHEST VALUE IS       0.00076 AT (  468249.60,  3780799.20,     1.50,     0.00,    0.00)  DC

          9TH HIGHEST VALUE IS       0.00074 AT (  468226.90,  3780730.70,     1.50,     0.00,    0.00)  DC

         10TH HIGHEST VALUE IS       0.00073 AT (  468454.40,  3780936.90,     0.00,     0.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                         ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
   16:58:03

   PAGE  30
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL
                                                        *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***


                                            ** CONC OF PM10     IN MICROGRAMS/M**3                         **

                                                                  DATE
          NETWORK
GROUP ID                           AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)
 OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       0.01575  ON 11011119: AT (  468493.60,  3780565.90,     1.50,     0.00,
0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                         ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
   16:58:03
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```
                                                HR Attachment A
   PAGE  31
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

                                               *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                    ** CONC OF PM10     IN MICROGRAMS/M**3                          **

                                                         DATE
          NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)
 OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       0.00411  ON 11122624: AT (  468349.60,  3780572.70,     1.50,     0.00,
0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
 *** AERMOD - VERSION  15181 ***   ***  PM10 exhaust only Tier IV                                                  ***
     05/08/16
 *** AERMET - VERSION  14134 ***   ***                                                                            ***
   16:58:03

   PAGE  32
 **MODELOPTs:   RegDFAULT CONC      ELEV      RURAL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            0 Warning Message(s)
 A Total of         1086 Informational Message(s)

 A Total of        17520 Hours Were Processed

 A Total of            5 Calm Hours Identified

 A Total of          533 Missing Hours Identified (  3.04 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

Attachment B

PM 10 Exhaust Air Quality Health Risk Calculations

	Truck Trips (QTY)	Round Trip Idling Trucks	Idling Truck Emission Rate g/m	Idle Time/truck/day - (min)	Emissions per day (grams) - One Truck	Annual Emissions over 247 days - one truck (grams)	Annual Emissions over 247 days - all trucks (grams)	Annual Emission Rate one truck 365 days (g/s)
Heavy Trucks	55	27	0.0033	5	0.0167	4.1167	111.15	1.30539E-07
Medium Heavy	25	13	0.0033	5	0.0167	4.1167	53.52	1.30539E-07
Light	28	14	0.0033	5	0.0167	4.1167	57.63	1.30539E-07
Total	108	54						

Area Source Conversion	
Length (m)	134.2
Width (m)	16
Area Source Area (m^2)	2147.2
Predicted Annual Worst Case from AERMOD output Figure	0.00096

1st find Dose (Equation 5.4.1.1) Page 5-24

Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From F15	0.00096	0.00096	0.00096	0.00096	0.00096	0.00096
Breathing Rate per age group BR/BW (Page 5-25)	361	1090	861	745	335	290
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00000033	0.00000100	0.00000079	0.00000069	0.00000031	0.00000027
Construction Days						
potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	11	12	13	14
ED	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH (USE 1 if School for 3rd and 2-9) Page 8-5	0.85	0.85	0.72	0.72	0.73	0.73
Risk for Each Age Group	1.111E-08	2.684E-07	6.913E-07	1.305E-06	6.446E-07	2.318E-06
	0.0111	0.2684	0.6913	1.3051	0.6446	2.3178

Cancer Risk Per Million 9-years	0.97
Cancer Risk Per Million 30-years	2.23
Cancer Risk Per Million 70-years	3.90

APPENDIX B

Cultural Resource Study Findings Memo

ASM affiliates
Archaeology • History • Ethnography • Architectural History

April 19, 2016

Karina Fidler, AICP, CPESC
Kimley-Horn
401 B Street, Suite 600
San Diego, California 92101

Re: Cultural Resource Study Findings Memo for the IPT I-215 Distribution Center II (Georgia) Project, San Bernardino, San Bernardino County, California

Dear Ms. Fidler,

This letter report documents the results of the cultural resource study conducted for the IPT I-215 Distribution Center II (Georgia) project (Project) by ASM Affiliates, Inc. (ASM). The study was completed in compliance with California Environmental Quality Act (CEQA) requirements. The lead agency is the City of San Bernardino. This document is part of an Initial Study to address the potential environmental impacts of the proposed project pursuant to the required provisions of CEQA, Public Resources Code Section 21000 et seq., and State CEQA Guidelines Section 15063. The study was undertaken to determine the presence or absence of any resources within the Project area that may be eligible for listing in the California Register of Historical Resources (CRHR), and as such a historic resource requiring consideration under CEQA.

The study included a records search at the South Central Coastal Information Center (SCCIC), a search of the Sacred Lands File (SLF) of the California Native American Heritage Commission (NAHC), assessment of historic maps and aerial photographs, and a pedestrian survey of accessible portions of the Project area. No cultural resources were identified either by archival research or pedestrian survey within the Project area.

Project Description and Location

The proposed IPT I-215 Distribution Center II (Georgia) project location is depicted on the USGS 7.5-minute San Bernardino North, Calif. topographic quadrangle in an unsectioned area of Township 1 North, Range 4 West. The project site encompasses approximately 8.1 acres located on the southwest corner of Saratoga Way and Georgia Boulevard (Figure 1). The overall area within which the project is situated is within the northwest sector of the City and consists of single and multi-family residential, open space, recreational, commercial, and industrial land uses. The Project parcel itself lies between two developed industrial properties. The land is currently vacant and densely covered with invasive weeds and plants.

The proposed IPT I-215 Distribution Center II (Georgia) (proposed project) is a 150,790-SF industrial building with office space, parking, and landscaping. The industrial building would be one floor with a maximum height of 47 feet. The building would include 147,790 SF of warehouse space and 5,000 SF of dedicated office space. The building would have 29 dock doors on its southern frontage. Total on-site parking would be 176 stalls, with 94 dedicated to warehouse parking (including office) and 82 trailer/dock door parking spaces. Landscaping in

the amount of 33,619 SF is anticipated for the site. Roadway frontage improvements would be provided on Georgia Boulevard. Access to the project site would consist of two full-movement driveways on Georgia Boulevard for both trucks and passenger vehicles. Passenger vehicles would enter the site via either of the driveways, depending on which is closest to their parking area destination. Trucks would enter and exit the site via either of the driveways, depending on dock availability on either end of the project site. Both entrances would be unsignalized.

The industrial building is currently planned as a "spec building." Thus, the future tenant of the building is not currently known. Furthermore, without knowing the future tenant, an exact number of future employees or hours of operation cannot be determined. Therefore, the Initial Study and associated technical reports use approximate potential on-site employees, hours of operation, and trip counts to and from the site based on the project's proposed square footage and use as an industrial center building.

Brief Environmental and Cultural Setting

Natural Setting

The City of San Bernardino is located approximately 60 miles east of the City of Los Angeles, at the southern base of the San Bernardino Mountains. It lies in the upper Santa Ana River Valley, and is bounded by the San Bernardino Mountains on the northeast and east, Blue Mountain and Box Springs Mountain abutting the Cities of Loma Linda and Redlands to the south, and the San Gabriel Mountains and Jurupa Hills to the northwest and southwest, respectively. The City is largely urbanized and surrounded by other developed cities; the Project area is similarly highly urbanized.

Prehistoric Period

Archaeological investigations in San Bernardino County and elsewhere in southern California have documented a diverse range of prehistoric human occupations, extending from the terminal Pleistocene down to the time of European contact (Koerper and Drover 1983; Mason 1984; McKenna 1986; Wallace 1955; Warren 1968).

Paleoindian (pre-6000 B.C.)

Paleoindian assemblages include large stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of ground stone tools. These tools suggest a reliance on hunting rather than gathering. In general, hunting-related tools are more common during this period and are replaced by processing tools during the early Holocene (Basgall and Hall 1990).

Milling Stone Horizon (6000 B.C. – 750 A.D.)

The Milling Stone Horizon is characterized by the presence of hand stones, milling stones, choppers, and scrapers. These tools are thought to be associated with seed gathering and processing and limited hunting activities. The artifacts from this period show a major shift in the exploitation of natural resources.

Late Prehistoric Horizon (A.D. 750-1750)
Like much of Southern California, this horizon in the general Project area is characterized by the presence of small projectile points associated with the use of bow and arrow. Steatite containers, asphaltum items, mortars and pestles, and bedrock mortars are also common artifacts.

Ethnohistoric Period (Post A.D. 1750)
The Project area is within the ethnohistoric territory of the Gabrielino Indians, and along the border of the Serrano's territory within the mountains. Both the Gabrielino and Serrano claim the area as part of their traditional homeland. The Gabrielino name derived from their association with the San Gabriel Valley and the Mission San Gabriel de Archangel (Bean and Smith 1978a, 1978b).

Both the Serrano and the Gabrielino utilized numerous plants and animals for food, shelter, and medicines (Kroeber 1976). Seeds were most often used followed by foliage, shoots, fruits, and berries. Mountain shrubs, ash, elder, and willow were used for shelters and tool materials such as bows. Fauna used as food sources included deer, rabbits, wood rats, squirrels, quail, and ducks. Animals specifically not used were dog, coyote, bear, tree squirrel, pigeon, dove, mud hen, eagle, buzzard, raven, lizards, frogs, and turtles (Kroeber 1976).

The Serrano and Gabrielino used numerous styles of bows, bedrock mortars, portable mortars, pipes, chisels, metates, manos, and various forms of chipped stone tools. Prior to the establishment of the Mission system Native Americans lived larger villages, associated with smaller villages with limited activity areas and smaller populations. Seasonal migration was practiced across the area for both the exploitation of resources and based on seasonal weather conditions.

Historic Period
Spanish and Mexican Periods
Spanish explorer Juan Rodríguez Cabrillo first discovered California in 1542, claiming it for the King of Spain. However, Spanish contact within the vicinity of the Project area did not take place until the 1770s when Father Garces traveled across the Mojave Desert and entered coastal southern California through the Cajon Pass (Walker 1968).

The Mission San Gabriel de Archangel was established in 1771 and claimed what are now the San Gabriel and San Bernardino valleys. In 1819, a mission outpost, or asistencia, was established in the area of present-day Redlands (Dumke 1944; Hanna 1951; McWilliams 1973; Scott 1977). This outpost, part of Mission San Gabriel's Rancho San Bernardino, was established in order to expand the agricultural holdings of Mission San Gabriel. The asistencia was later moved to its current location, where construction began in 1830; it was abandoned soon after in 1834 (Lugo 1950).

The Mexican War of Independence ended in 1821, severing the Spanish hold on the Californias and secularizing former mission lands. A series of ranchos was granted throughout the San Bernardino Valley and much of the land was used for ranching activities. Although some land had been granted to Indians, most of the land went to military men or merchants. In 1842, the

Lugo family was granted the Rancho San Bernardino, which encompassed approximately 37,700 acres.

Granting large ranch lands or ranchos remained as both a Spanish and a Mexican legacy in California. Land granted to Mexicans between 1833 and 1846 amounted to 500 ranchos primarily granted near the coast from San Francisco to San Diego. Mexican Governor Pío Pico granted a great number of those ranchos prior to 1846, quickly carving up Alta California to ensure Mexican land titles survived a U.S. victory in the Mexican-American War (1846-1848) (Christenson and Sweet 2008:7; Engstrand 2005:64-66; Robinson 1948:23-72).

American Period

(from http://www.ci.san-bernardino.ca.us/about/history/history_of_san_bernardino_(short_version).asp)

The first non-Mexican settlers to the area were the Mormon pioneers who were directed by Brigham Young to establish a colony in the San Bernardino Valley. They purchased 35,000 acres of the Rancho San Bernardino in 1851, for $77,500, with a down payment of $7,000. The Mormons built a stockade around the rancho and named it Fort San Bernardino. The families lived inside the stockade for the first few years. They grew wheat and other crops outside and a grain mill inside. After their fear of attack from local Native Americans abated, the residents moved outside the stockade and began building homes in the area.

In the fall of 1852, Colonel Henry Washington, a United States deputy surveyor, erected a monument on top of Mount San Bernardino, creating the San Bernardino base line from which surveys in the southern part of the state were, and are still made. In 1854, the City of San Bernardino was officially incorporated. The population at the time was 1,200, with 900 of them Mormons; as such, the early city was a temperance town, with no drinking or gambling allowed. Brigham Young recalled the Mormons to Salt Lake City in 1857, some of whom left, while others opted to remain in the new city. Though only in the area en masse for six years, the Mormons made numerous achievements, establishing schools, stores, a network of roads, and a strong government.

Gold was discovered in Holcomb Valley in 1860, prompting prospectors to pour into the mountains through San Bernardino to try their luck at panning. For a time Belleville, in Holcomb Valley, was the largest city in Southern California with 10,000 residents, and it almost became the county seat, losing to San Bernardino by only one vote.

The large railway companies eventually found their way to San Bernardino in the last years of the nineteenth century, raising the profile of the city. The Santa Fe, the Union Pacific, and the Southern Pacific railroads all converged on the city, making it the hub of their southern California operations. Competition between the railroads set off a rate war, which brought thousands of newcomers to California in the great land boom of the 1880s. When the Santa Fe Railway established a transcontinental link in 1886, the already prosperous valley exploded, with even more settlers now coming from the East. Population figures doubled, from 6,150 in 1900 to 12,779 in 1910, the year that the San Bernardino Chamber of Commerce was first organized.

Study Methods

Methods used to assess the presence of and potential for cultural resources within the property included a search of existing records and a pedestrian field survey. The records search was conducted by the SCCIC and included the Project area and a radius of 1 mi. around it. ASM also requested a search of the Sacred Lands File (SLF) maintained by the NAHC. Historic aerial photographs and historic USGS topographic maps of the Project area were consulted from historicaerials.com.

The field survey was conducted on April 14, 2016 by ASM Senior Archaeologist Sherri Andrews. Field methods consisted of a pedestrian survey of accessible areas within the proposed Project site using transects spaced at 15-m intervals.

Study Results

Records Search Results

A records search was requested from the SCCIC on March 16, 2016, for an area encompassing a 1-mile radius around the Project area. Results were received by ASM on April 6, 2016. The search identified 18 previous cultural resource studies that had been conducted within a 1-mi. radius (Table 1). Two of the studies (SB-00607 and SB-06994) have encompassed the Project area.

Table 1. Previous Cultural Resources Reports Addressing the Project Area and the 1-mi. Records Search Radius

Report No (SB-)	Year	Author(s) / Affiliation	Title
00607	**1978**	**Hearn, Joseph E. / San Bernardino County Museum Association**	**Archaeological, Paleontological, and Historical Resources Assessment of Proposed College Industrial Park Development, San Bernardino Area**
01285	1982	Lerch, Michael K. / San Bernardino County Museum Association	Cultural Resources Assessment of the Cajon Creek Project (Wilson Property and Surrounding Properties), San Bernardino County, California
02484	1991	White, Robert S. / Archaeological Associates	An Archaeological Assessment of a 10+/- Acre Parcel Located Immediately Northeast of the Interstate 215 Freeway and University Parkway Underpass in San Bernardino County
02712	1990	Cook, John R. / ASM Affiliates, Inc.	Cultural Resource Survey of the Cajon Creek Specific Plan Project, San Bernardino County, California
03085	1995	Lerch, Michael K. / M. K. Lerch & Associates	Cultural Resources Assessment of the Culligan Project, San Bernardino, CA
03638	2001	Love, Bruce / CRM Tech	Ogden & Scott Labs Reservoirs in and near the City of San Bernardino, San Bernardino County, CA
03644	1979	Van Horn, David / Archaeological Associates	Archaeological Survey Report: A 165 Acre +/- Parcel Located South of Kendall Drive near San Bernardino, CA
03648	1998	Brechbiel, Brant / Chambers Group	Cultural Resource Record Search & Literature Review for a Pacific Bell Mobile Services Telecommunications Facility: CM 035-01 in the City of San Bernardino, CA
03650	1999	White, Robert, and Laurie White / Archaeological Associates	An Archeological Assessment of TT 15977, a 39 Acre Parcel Located Adjacent to Kendall Drive in the Verdemont Area of San Bernardino
03708	1998	White, Robert, and Laurie White / Archaeological Associates	An Archeological Assessment of a 28.05 Acre Parcel (TPM 15154) Adjacent to Kendall Drive at University Parkway, San Bernardino, CA
05536	2005	Swope, Karen K.	Historic Property Survey Report: 4th Supplemental 8SBd 210/30 P.M. 20.6/22.9

Report No (SB-)	Year	Author(s) / Affiliation	Title
06291	2008	Smith, Francesca, Caprice D. Harper, William Makeda, and John Dietler	Cultural Resource Technical Report: sbX E Street Corridor BRT Project, Cities of Loma Linda and San Bernardino, San Bernardino County, California
06446	2008	Chasteen, Carrie	Determinations of Effect Report: sbX E Street Corridor Bus Rapid Transit (BRT) Project, Cities of Loma Linda and San Bernardino, San Bernardino County, California
06447	2009	Chasteen, Carrie	Addendum Cultural Resources Technical Report: sbX E Street Corridor BRT Project, Cities of Loma Linda and San Bernardino, San Bernardino County, California
06994	**2011**	**Sanka, Jennifer**	**Cultural Resources Assessment: San Bernardino Redevelopment Project Area Merger — Area B Project, City of San Bernardino, San Bernardino County, California**
07630	2012	Billat, Lorna	BTS Yesco, LA 5621A
07631	1993	Hunter, Milton	Site Survey Summary Sheet for DERP-FUDS Site No. JO9CA058700, CWS Plant
07634	2012	Tang, Bai "Tom"	Subsurface Archaeological Sensitivity Assessment Water Main Project, Northpark Boulevard at University Parkway, City of San Bernardino, San Bernardino County, California

Only two cultural resources have been previously recorded within the 1-mi. records search radius (Table 2). Both are historic, one a manufacturing facility and the other a transmission line. No resources have been previously documented within the Project area.

Table 2. Previously Recorded Cultural Resources within the 1-mi. Records Search Radius

Primary # (P-36-)	Trinomial (CA-SBR-)	Other ID	Recorded by / date	Site Type	Attribute Codes	Relationship to Project Area
008303	8303H	Culligan USA	Lerch / 1995	Historic	AH2 (Foundations/structure pads); AH15 (Standing structures); AH16 (Other)	~.75 mi. SE
010316	10316H	Arrowhead-Mojave Siphon-Devil Canyon-Shandin 115kv; Kramer-Victorville Transmission Line; Southern Sierras Tower Line	Clark / 2013 (most recent)	Historic	HP11 (Engineering structure); HP39 (Other)	~.75 mi. E

Historical Research

Historic topographic maps dating from 1896, 1898, 1901, 1905, 1909, 1913, 1926, 1929, 1938, 1941, 1946, 1955, 1959, 1963, 1965, 1969, 1975, 1984, 1988, and 1999; and historic aerial photographs dating from 1938, 1959, 1966, 1968, 1979, 1980, 1995, 2002, 2005, 2009, 2010, and 2012 (historicaerials.com) were consulted to assess historic uses of the project parcel.

On the earliest topos (1898-1938), the only constructed elements within the general vicinity and flanking the Project area are the railroad to the west, with an unnamed road running parallel to its western edge and an unnamed road to the east. Both of these features run northwest/southeast. The railroad here is labeled "Atchison Topeka and Santa Fe R.R. Southern California Div."

The 1941 topo depicts new communities called Ono and Muscoy to the west of the railroad and south of the Project area. The railroad is now labeled "Union Pacific Atchison Topeka and Santa Fe" and the road to the west of the railroad is now called Cajon Boulevard.

The area west of the railroad is much more developed in the 1955 topo and is now only called Muscoy. Development is depicted to the north of the project area and the road to the south is now called Devil Canyon Road. Conditions remain essentially the same through the 1965 topo. The "Barstow Freeway" (now Interstate 215) appears to the east of the Project area on the 1969 topo, and the road to the south has become State College Parkway.

The first structure within the vicinity of the Project appears to the north in 1975, as does a road that runs along the east side of the railroad. The image remains largely the same in 1984. In the photorevised 1988 version, the building that now exists to the north of the proposed Project appears, as do the streets that now provide access.

The 1938 aerial photo shows the project area largely unused, but the 1959 version shows a number of dirt access roads in a grid-like pattern. No significant changes are apparent until the 1995 topo, in which a large number of buildings are depicted.

At no point is any structure or historic use depicted within the Project parcel on either topographic maps or aerial photographs.

NAHC Sacred Lands File Search

On March 31, 2016, ASM sent a request to the NAHC to search their Sacred Lands File (SLF) to determine whether their files contained any information relating to the presence of Native American cultural resources within the Project parcel. Response from the NAHC was received on April 14, 2016, indicating that no such resources were found as a result of the SLF search. However, the absence of specific site information in the SLF does not indicate the absence of Native American cultural resources within the Project area. A list of 11 contacts representing tribes with traditional lands or cultural places located within the boundaries of San Bernardino County was provided with the NAHC response; this response and contact list is provided with this report as Appendix A.

Pedestrian Survey Results

The Project is located within a relatively flat landscape that, while not previously occupied, appears to have been entirely previously disturbed. The small parcel is currently heavily overgrown with native and invasive plants, somewhat limiting surface visibility. However, the visible surface area is marked with ruts and ridges caused by machinery (Figures 2 and 3). There are various small pockets of modern refuse appearing throughout the parcel, primarily fast or processed food wrappers or containers and other wind-blown paper and plastic. It also appears that one or more people either currently or recently have camped along the south edge of the parcel where there is a depressed area between the edge of the parcel and the fence separating it from the facility to the south.

California Register of Historic Resources (CRHR)
For purposes of CEQA, a historic resource is any object, building, structure, site, area, place, record, or manuscript listed in or eligible for listing in the CRHR (PRC §5024.1, Title 14 CCR, §4852). A resource is eligible for listing in the CRHR if it meets any of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
(2) Is associated with the lives of persons important in our past
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
(4) Has yielded, or may be likely to yield, information important to prehistory or history.

Recommendations
No previously undocumented resources were identified as a result of this project. Additionally, no previously documented resources were found in the SCCIC records search, although the Project site and surrounding area had been previously surveyed. The SLF search conducted by the NAHC also resulted in negative findings. Finally, assessment of historic topographic maps and aerial photographs dating from 1898 into the modern period show no structures on the Project site at any time or any other clear historic uses of the Project area. As such, the results of the records searches, the historical map and photo analysis, and the current survey indicate a very low archaeological sensitivity for the Project area as a whole. No additional work is recommended.

Should you have any questions regarding this study, please do not hesitate to contact me.

Respectfully submitted,

Sherri Andrews, M.A., RPA
Senior Archaeologist

Attachments
Figure 1. Project location.
Figure 2. View from north edge of the Project area toward southwest, showing typical surface disturbance.
Figure 3. View from southeast corner of the Project area toward northwest.
Appendix A. NAHC correspondence

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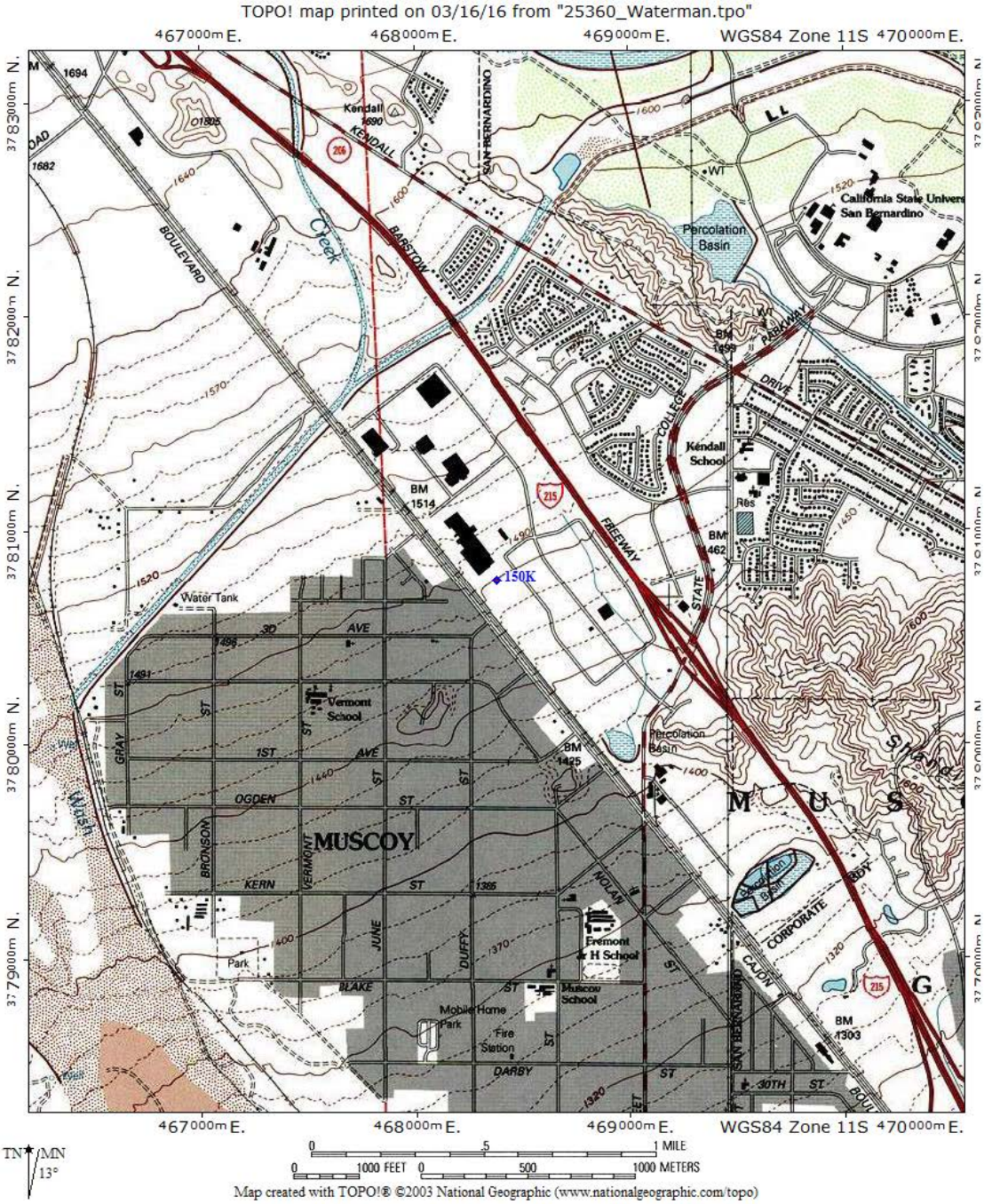

Figure 1. Project location.

Figure 2. View from north edge of the Project area toward southwest, showing typical surface disturbance.

Figure 3. View from southeast corner of the Project area toward northwest.

APPENDIX A

NAHC CORRESPONDENCE

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 FAX

April 4, 2016

Sherri Andrews
ASM Affiliates

Sent via e-mail: sandrews@asmaffiliates.com
Number of Pages: 4

RE: The Proposed Georgia Boulevard 150K Distribution Center Project, City of San Bernardino, San Bernardino North USGS Quadrangle, San Bernardino County, California

Dear Ms. Andrews:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties. Please note that the intent above reference codes is to mitigate impacts to tribal cultural resources, as defined, for California Environmental Quality Act (CEQA) projects.

As of July 1, 2015, Public Resources Code Sections 21080.3.1 and 21080.3.2 require public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose mitigating impacts to tribal cultural resources:

> Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section. (Public Resources Code Section 21080.3.1(d))

The law does not preclude agencies from initiating consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions. The NAHC believes that in fact that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

In accordance with Public Resources Code Section 21080.3.1(d), formal notification must include a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation. The NAHC believes that agencies should also include with their notification letters information regarding any cultural resources assessment that has been completed on the APE, such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

   - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE;
   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
   - If the probability is low, moderate, or high that cultural resources are located in the APE.
   - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE; and

- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measurers.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure in accordance with Government Code Section 6254.10.

3. The results of any Sacred Lands File (SFL) check conducted through Native American Heritage Commission. A search of the SFL was completed for the USGS quadrangle information provided with negative results.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a cultural place. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the case that they do, having the information beforehand well help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance we are able to assure that our consultation list contains current information.

If you have any questions, please contact me at my email address: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst

Native American Heritage Commission
Tribal Consultation List
San Bernardino County
April 1, 2016

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This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Georgia Boulevard 150K Distribution Center Project, City of San Bernardino, San Bernardino North USGS Quadrangle, San Bernardino County, California.

Native American Heritage Commission
Tribal Consultation List
San Bernardino County
April 1, 2016

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This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Georgia Boulevard 150K Distribution Center Project, City of San Bernardino, San Bernardino North USGS Quadrangle, San Bernardino County, California.

APPENDIX C

Geotechnical Engineering Investigation

GEOTECHNICAL INVESTIGATION
PROPOSED COMMERCIAL/INDUSTRIAL BUILDING

4472 N. Georgia Boulevard
San Bernardino, California
for
Industrial Property Trust

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

November 23, 2015

Industrial Property Trust
518 17th Street, Suite 1700
Denver, Colorado 80202

Attention: Ms. Sara J. Butz
Vice President, Real Estate

Project No.: **15G205-1**

Subject: **Geotechnical Investigation**
Proposed Commercial/Industrial Building
4472 N. Georgia Boulevard
San Bernardino, California

Gentlemen:

In accordance with your request, we have conducted a geotechnical investigation at the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Pablo Montes Jr.
Staff Engineer

John A. Seminara, GE 2294
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
JOHN A. SEMINARA
No. 2294
GEOTECHNICAL
STATE OF CALIFORNIA

Distribution: (1) Addressee

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1.0 EXECUTIVE SUMMARY

Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

Site Preparation

- Initial site preparation should include stripping of any surficial vegetation. Based on the conditions encountered at the time of our site explorations, only minor stripping of native grasses and weeds is expected to be required at the site. However, the existing trees and associated root-masses should be removed in their entirety and disposed of off-site.
- The northeast portion of the site is developed with an asphaltic concrete drive lane. Additionally, a significant amount of open-graded gravel overlays the ground surface within the northeastern region of the site. Demolition of the existing drive area is expected to be required in order to allow for the new development. Debris resulting from the demolition should be disposed of off-site. Alternatively, concrete and asphalt debris and the existing open-graded gravel may be crushed to a maximum 2 inch particle size, well mixed with the on-site soils, and incorporated into new structural fill.
- Artificial fill soils were encountered at several of the boring locations, extending to depths of 4½ to 8½± feet. Additionally, soils classified as possible fill were encountered extending to depths of 12 to 14½± feet below existing site grades. The near-surface alluvial soils possess variable strengths and varying gravel content.
- Remedial grading is recommended to be performed within the new building pad area in order to remove the existing fill soils in their entirety, as well as a portion of the upper native alluvium. The existing soils within the building areas should be overexcavated to a depth of 5 feet below existing grade and to a depth of 5 feet below proposed pad grade. The soils within the proposed foundation influence zones should be overexcavated to a depth of 3 feet below proposed foundation bearing grades. The overexcavation should also extend to a sufficient depth to remove the artificial fill soils from the building pad area. At the boring locations, existing fill soils extend to depths of 4½ to 8½± feet.
- After the recommended overexcavation has been completed, the resulting subgrade soils should be evaluated by the geotechnical engineer to identify any additional soils that should be overexcavated. The resulting subgrade should then be scarified to a depth of 12 inches and thoroughly moisture conditioned to 2 to 4 percent above optimum moisture content. The resulting subgrade should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. The previously excavated soils may then be replaced as compacted structural fill.
- The new parking area subgrade soils are recommended to be scarified to a depth of 12± inches, moisture conditioned to 2 to 4 percent above optimum, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Building Foundations

- Conventional shallow foundations, supported in newly placed compacted fill.
- 2,500 lbs/ft^2 maximum allowable soil bearing pressure.

- Reinforcement consisting of at least two (2) No. 5 rebars (1 top and 1 bottom) in strip footings. Additional reinforcement may be necessary for structural considerations.

Building Floor Slabs

- Conventional Slab-on-Grade, 5 inches thick.
- Modulus of Subgrade Reaction: 125 psi/in.
- Reinforcement is not required with respect to geotechnical conditions. The actual floor slab reinforcement to be determined by the structural engineer. Additional reinforcement may be necessary for structural considerations.

Pavements

ASPHALT PAVEMENTS (R = 60)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	3	3	3	3	4
Compacted Subgrade	12	12	12	12	12

PORTLAND CEMENT CONCRETE PAVEMENTS (R = 60)				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	6	7	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

2.0 SCOPE OF SERVICES

The scope of services performed for this project was in accordance with our Proposal No. 15P260R, dated June 17, 2015. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations, building floor slab, and parking lot pavements along with site preparation recommendations and construction considerations for the proposed development. The evaluation of the environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Conditions

The subject site is located at the street address of 4472 N. Georgia Boulevard in San Bernardino, California. The site is bounded to the northwest by Shenandoah Way, to the northeast by Georgia Boulevard, to the southeast by an existing commercial/industrial building, and to the south and southwest by a BNSF railroad easement. The general location of the site is illustrated on the Site Location Map included as Plate 1 in Appendix A of this report.

The overall site is currently developed with an existing 250,000± ft^2 warehouse, located in the central region of the site. The area located to the southeast of the existing building is utilized as trailer storage. Ground surface cover in this portion of the site consists of exposed soil with areas of open-graded gravel and some small trees. An asphaltic concrete drive lane also extends through this portion of the site. The area which is the subject of this report includes a portion of the trailer storage area, as well as a rectangular-shaped vacant lot located to the southeast of the property. Ground surface cover within the vacant lot consists of exposed soil with negligible to sparse native grass and weed growth. Topographic information was not available at the time of this report. However, the majority of the subject site is elevated from the surrounding properties. Visually, there is an estimated 6 to 10± feet of elevation differential between the existing site grades and the surrounding properties.

3.2 Proposed Development

Our office was provided with a site plan, identified as Scheme 4, which was prepared by HPA. Based on our review of this plan, the site will be developed with one (1) commercial/industrial building, identified as Building 2. Building 2 will be 167,340± ft^2 in size and will primarily be located within the vacant lot, but will also extend into the existing trailer storage area. Loading docks will be located on the north and south sides of the building. However, we understand that the client is also considering an alternative site configuration and the proposed orientation of the building may be rotated. It is expected that the building will be surrounded by asphaltic concrete pavements in the drive lanes and parking areas and Portland cement concrete in the loading dock and truck court areas. Several landscape planters and concrete flatwork are expected to be included throughout the site.

Detailed structural information has not been provided. It is assumed that the new building will be a single-story structure of tilt-up concrete construction, supported on a conventional shallow foundation system, with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 80 kips and 3 to 5 kips per linear foot, respectively.

No significant amounts of below grade construction, such as basements or crawl spaces, are expected to be included in the proposed development. Based on the existing site topography and

assuming a relatively level site, cuts of 3 to 8± feet and fills 2 to 4± feet are expected to be necessary to achieve the proposed building pad grade.

4.0 SUBSURFACE EXPLORATION

4.1 Scope of Exploration/Sampling Methods

The subsurface exploration conducted for this project consisted of six (6) borings advanced to depths of 5 to 31½± feet below currently existing site grades. All of the borings were logged during drilling by a member of our staff.

The borings were advanced with hollow-stem augers, by a conventional truck-mounted drilling rig. Representative bulk and in-situ soil samples were taken during drilling. Relatively undisturbed in-situ samples were taken with a split barrel "California Sampler" containing a series of one inch long, 2.416± inch diameter brass rings. This sampling method is described in ASTM Test Method D-3550. In-situ samples were also taken using a 1.4± inch inside diameter split spoon sampler, in general accordance with ASTM D-1586. Both of these samplers are driven into the ground with successive blows of a 140-pound weight falling 30 inches. The blow counts obtained during driving are recorded for further analysis. Bulk samples were collected in plastic bags to retain their original moisture content. The relatively undisturbed ring samples were placed in molded plastic sleeves that were then sealed and transported to our laboratory.

The approximate locations of the borings are indicated on the Boring Location Plan, included as Plate 2 in Appendix A of this report. The Boring Logs, which illustrate the conditions encountered at the boring locations, as well as the results of some of the laboratory testing, are included in Appendix B.

4.2 Geotechnical Conditions

Pavements

Boring No. B-1 was located within the asphaltic concrete drive lane. At this boring location, the pavements consist of 2± inches of asphaltic concrete underlain by 3± inches of aggregate base.

Artificial Fill

Artificial fill soils were encountered at the ground surface at all of the boring locations, with the exception of Boring No. B-2. The fill soils generally extend to depths of 4½ to 8½± below existing site grades, and generally consist of loose to dense fine to coarse sands and silty fine to medium sands with varying gravel content. The fill soils possess variable strengths and a disturbed appearance, resulting in their classification as artificial fill.

Additional soils classified as possible fill were identified at several of the boring locations, extending to depths of 12 to 14½± feet. The possible fill materials generally consist of medium dense to very dense silty fine to coarse sands with varying gravel content. These soils were

classified as possible fill based on their similarities with both the overlying fill and the underlying alluvial soils.

Alluvium

Native alluvial soils were encountered at the ground surface and below the fill/possible fill soils at all of the boring locations, with the exception of Boring No. B-6 which was terminated within the fill materials. The near-surface alluvium generally consists of medium dense fine to coarse sands with varying silt and fine to coarse gravel content, extending to depths of 12 to 17± feet. Beneath these soils, the alluvium is generally comprised of very dense fine to coarse sands with varying gravel content and occasional cobbles, extending to the maximum depth explored of 30± feet.

Groundwater

Free water was not encountered during drilling of any of the borings. In addition, delayed readings taken within the open boreholes did not identify any free water. Based on the lack of any water within the borings, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 30± feet at the time of the subsurface exploration.

5.0 LABORATORY TESTING

The soil samples recovered from the subsurface exploration were returned to our laboratory for further testing to determine selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. Field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Boring Logs and are periodically referenced throughout this report.

In-situ Density and Moisture Content

The density has been determined for selected relatively undisturbed ring samples. These densities were determined in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Consolidation

Selected soil samples have been tested to determine their consolidation potential, in accordance with ASTM D-2435. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Each sample is then loaded incrementally in a geometric progression and the resulting deflection is recorded at selected time intervals. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The samples are typically inundated with water at an intermediate load to determine their potential for collapse or heave. The results of the consolidation testing are plotted on Plates C-1 through C-4 in Appendix C of this report.

Soluble Sulfates

A representative sample of the near-surface soils was submitted to a subcontracted analytical laboratory for determination of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The results of the soluble sulfate testing are presented below, and are discussed further in a subsequent section of this report.

Sample Identification	Soluble Sulfates (%)	ACI Classification
B-3 @ 0 to 5 feet	0.002	Negligible

Maximum Dry Density and Optimum Moisture Content

One (1) representative bulk sample of the on-site soils obtained from the top 5 feet was tested for its maximum dry density and optimum moisture content. The results have been obtained using the Modified Proctor procedure, per ASTM D-1557. These tests are generally used to compare the in-situ densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil type or soil mixes may be necessary at a later date. The results of the testing are plotted on Plate C-5 in Appendix C of this report.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered feasible from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations. The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The Grading Guide Specifications, included as Appendix D, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions that differ from those stated in this report, or which may be detrimental for the development.

6.1 Seismic Design Considerations

The subject site is located in an area which is subject to strong ground motions due to earthquakes. The performance of a site specific seismic hazards analysis was beyond the scope of this investigation. However, numerous faults capable of producing significant ground motions are located near the subject site. Due to economic considerations, it is not generally considered reasonable to design a structure that is not susceptible to earthquake damage. Therefore, significant damage to structures may be unavoidable during large earthquakes. The proposed structures should, however, be designed to resist structural collapse and thereby provide reasonable protection from serious injury, catastrophic property damage and loss of life.

Faulting and Seismicity

Research of available maps indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. Therefore, the possibility of significant fault rupture on the site is considered to be low.

Seismic Design Parameters

Based on standards in place at the time of this report, the proposed development must be designed in accordance with the requirements of the 2013 edition of the California Building Code (CBC).

The CBC provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of the structure including the structural system and height. The seismic design parameters presented below are based on the soil profile and the proximity of known faults with respect to the subject site.

The 2013 CBC Seismic Design Parameters have been generated using U.S. Seismic Design Maps, a web-based software application developed by the United States Geological Survey. This software application, available at the USGS web site, calculates seismic design parameters in accordance with the 2013 CBC, utilizing a database of deterministic site accelerations at 0.01 degree intervals. The table below is a compilation of the data provided by the USGS application.

A copy of the output generated from this program is included in Appendix E of this report. A copy of the Design Response Spectrum, as generated by the USGS application is also included in Appendix E. Based on this output, the following parameters may be utilized for the subject site:

2013 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped Spectral Acceleration at 0.2 sec Period	S_S	2.273
Mapped Spectral Acceleration at 1.0 sec Period	S_1	1.058
Site Class	---	D
Site Modified Spectral Acceleration at 0.2 sec Period	S_{MS}	2.273
Site Modified Spectral Acceleration at 1.0 sec Period	S_{M1}	1.587
Design Spectral Acceleration at 0.2 sec Period	S_{DS}	1.515
Design Spectral Acceleration at 1.0 sec Period	S_{D1}	1.058

Liquefaction

Liquefaction is the loss of the strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and grain size characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 50 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean (d_{50}) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Clayey (cohesive) soils or soils which possess clay particles ($d<0.005$mm) in excess of 20 percent (Seed and Idriss, 1982) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The California Geological Survey (CGS) has not yet conducted detailed seismic hazards mapping in the area of the subject site. The general liquefaction susceptibility of the site was determined by research of the San Bernardino County Official Land Use Plan, General Plan, Geologic Hazard Overlay Map FH22C San Bernardino N Quadrangle, which indicates that the subject site is not located within an area of liquefaction susceptibility. Additionally, the subsurface conditions encountered at the borings drilled at the subject site are not considered to be conducive to liquefaction. These conditions generally consist of medium dense to very dense, well graded, granular soils, and no evidence of a static water table within the upper 30± feet. Based on the mapping performed by the county of San Bernardino and the subsurface conditions encountered at the boring locations, liquefaction is not considered to be a design concern for this project.

6.2 Geotechnical Design Considerations

General

Artificial fill soils were encountered at several of the borings, extending from the ground surface to depths of 4½ to 8½± feet. Additionally, possible fill soils were encountered within the proposed building area extending to depths of 12 to 14½± feet. The fill and possible fill soils possess variable strengths and unfavorable consolidation/collapse characteristics. Based on the results of laboratory testing, and the lack of any documentation regarding placement or compaction, the existing fill soils are considered to represent undocumented fill soils. These soils, in their present condition, are not considered suitable for support of the foundation loads of the new structure. Based on these considerations, remedial grading is necessary within the proposed building area in order to remove and replace the existing fill and near-surface alluvial soils as compacted structural fill.

Settlement

The recommended remedial grading will remove the existing fill soils and a portion of the upper alluvial soils, and replace these materials as compacted structural fill. The native soils that will remain in place below the depth of recommended overexcavation possess favorable consolidation/collapse characteristics. Therefore, following completion of the recommended grading, post-construction settlements are expected to be within tolerable limits.

Expansion

The near surface soils at this site generally consist of sands and silty sands. These materials have been visually classified as non-expansive. Therefore, no design considerations related to expansive soils are considered warranted for this site.

Shrinkage/Subsidence

Based on the results of the laboratory testing, removal and recompaction of the artificial fill soils and near-surface native alluvial soils is estimated to result in an average shrinkage of 12 to 16 percent. Minor ground subsidence is expected to occur in the soils below the zone of removal, due to settlement and machinery working. The subsidence is estimated to be 0.1± feet. This estimate may be used for grading in areas that are underlain by native alluvial soils.

These estimates are based on previous experience and the subsurface conditions encountered at the boring locations. The actual amount of subsidence is expected to be variable and will be dependent on the type of machinery used, repetitions of use, and dynamic effects, all of which are difficult to assess precisely.

Grading and Foundation Plan Review

No grading and foundation plans were available at the time of this report. It is therefore recommended that we be provided with copies of the preliminary plans, when they become

available, for review with regard to the conclusions, recommendations, and assumptions contained within this report.

6.3 Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the boring locations and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site-specific recommendations presented below.

Site Stripping and Demolition

Initial site preparation should include stripping of any topsoil, vegetation and organic debris on the site. Based on conditions observed at the time of the subsurface exploration, this will include minor stripping of native grasses and weeds. These materials should be disposed of off-site. The actual extent of stripping should be determined in the field by a representative of the geotechnical engineer, based on the organic content and the stability of the encountered materials.

The development is expected to require demolition of the existing asphaltic concrete drive lane. Any existing improvements that will not remain in place for use with the new development should be removed in its entirety. Debris resultant from demolition should be disposed of off-site. Alternatively, concrete and asphalt debris, and the open-graded gravel, may be crushed to a maximum 2 inch particle size, well mixed with the on-site soils, and incorporated into new structural fills.

Treatment of Existing Soils: Building Pad

Remedial grading should be performed within the proposed building area in order to remove all of the existing fill soils, possible fill soils, and the upper portion of the near-surface native alluvial soils. At boring locations within the proposed building pad area, existing fill soils extend to depths of 4½ to 8½± feet. It is recommended that the existing soils within the proposed building areas be overexcavated to a depth sufficient to remove all of the artificial fill soils and to at least 5 feet below proposed building pad subgrade elevation and to a depth of at least 5 feet below existing grade, whichever is greater.

Where not encompassed within the general building pad overexcavation, additional overexcavation should be performed within the influence zones of the new foundations, to provide for a new layer of compacted structural fill extending to a depth of 3 feet below proposed bearing grade.

The overexcavation areas should extend at least 5 feet beyond the building perimeter and foundations, and to an extent equal to the depth of fill below the new foundations. If the proposed structures incorporate any exterior columns (such as for a canopy or overhang) the overexcavation should also encompass these areas.

Following completion of the overexcavation, the subgrade soils within the building areas should be evaluated by the geotechnical engineer to verify their suitability to serve as the structural fill subgrade, as well as to support the foundation loads of the new structure. This evaluation should include proofrolling and probing to identify any soft, loose or otherwise unstable soils that must be removed. Some localized areas of deeper excavation may be required if additional fill materials or loose, porous, or low density native soils are encountered at the base of the overexcavation. Any possible fill soils that are identified at the bottom of overexcavation should be removed in their entirety.

After a suitable overexcavation subgrade has been achieved, the exposed soils should be scarified to a depth of at least 12 inches, moisture treated to 2 to 4 percent above optimum moisture content. The subgrade soils should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. The previously excavated soils may then be replaced as compacted structural fill.

Treatment of Existing Soils: Retaining Walls and Site Walls

The existing soils within the areas of any proposed retaining walls and site walls should be overexcavated to a depth of 3 feet below foundation bearing grade and replaced as compacted structural fill as discussed above for the proposed building pad. Additional overexcavation should be performed to remove any existing fill soils. The overexcavation subgrade soils should be evaluated by the geotechnical engineer prior to scarifying, moisture conditioning, and recompacting the upper 12 inches of exposed subgrade soils. The previously excavated soils may then be replaced as compacted structural fill.

Treatment of Existing Soils: Parking and Drive Areas

Based on economic considerations, overexcavation of the existing soils in the new parking and drive areas is not considered warranted, with the exception of areas where lower strength, or unstable, soils are identified by the geotechnical engineer during grading. Subgrade preparation in the new parking and drive areas should initially consist of removal of all soils disturbed during stripping and demolition operations.

The geotechnical engineer should then evaluate the subgrade to identify any areas of additional unsuitable soils. Any such materials should be removed to a level of firm and unyielding soil. The exposed subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to at least 2 to 4 percent above optimum, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. Based on the presence of variable strength surficial soils throughout the site, it is expected that some isolated areas of additional overexcavation may be required to remove zones of lower strength, unsuitable soils.

The grading recommendations presented above for the proposed parking area assume that the owner and/or developer can tolerate minor amounts of settlement within the proposed parking areas. The grading recommendations presented above do not completely mitigate the extent of undocumented fill soils or collapsible native alluvium in the parking areas. As such, settlement and associated pavement distress could occur. Typically, repair of such distressed areas involves significantly lower costs than completely mitigating these soils at the time of construction. If the

owner cannot tolerate the risk of such settlements, the parking area should be graded in a manner similar to that described for the building area.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 2 to 4 percent above the optimum moisture content, and compacted.
- On-site soils may be used for fill provided they are cleaned of any debris to the satisfaction of the geotechnical engineer.
- All grading and fill placement activities should be completed in accordance with the requirements of the 2013 CBC and the grading code of the City of San Bernardino.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Fill soils should be well mixed.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Imported Structural Fill

All imported structural fill should consist of very low expansive (EI < 20), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix D.

Utility Trench Backfill

In general, all utility trench backfill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. It is recommended that materials in excess of 3 inches in size not be used for utility trench backfill. Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by City of San Bernardino. All utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Utility trenches which parallel a footing, and extending below a 1h:1v plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Pea gravel backfill should not be used for these trenches.

6.4 Construction Considerations

Excavation Considerations

The near-surface soils generally consist of sands and silty sands. Some of these materials may be subject to minor caving within shallow excavations. Where caving does occur, flattened excavation slopes may be sufficient to provide excavation stability. On a preliminary basis, the

inclination of temporary slopes should not exceed 2h:1v. Deeper excavations may require some form of external stabilization such as shoring or bracing. Maintaining adequate moisture content within the near-surface soils will improve excavation stability. All excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

Moisture Sensitive Subgrade Soils

Most of the near surface soils possess appreciable silt content and may become unstable if exposed to significant moisture infiltration or disturbance by construction traffic. In addition, based on their granular content, some of the on-site soils will also be susceptible to erosion. The site should, therefore, be graded to prevent ponding of surface water and to prevent water from running into excavations.

Groundwater

The static groundwater table at this site is considered to exist at a depth in excess of 30± feet. Therefore, groundwater is not expected to impact grading or foundation construction activities.

6.5 Foundation Design and Construction

Based on the preceding grading recommendations, it is assumed that the new building pad will be underlain by structural fill soils used to replace existing fill soils and potentially compressible/collapsible near-surface alluvial soils. These new structural fill soils are expected to extend to depths of at least 3 feet below proposed foundation bearing grade, underlain by 1± foot of additional soil that has been scarified, moisture conditioned, and recompacted. Based on this subsurface profile, the proposed structures may be supported on conventional shallow foundations.

Foundation Design Parameters

New square and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 2,500 lbs/ft^2.
- Minimum wall/column footing width: 14 inches/24 inches.
- Minimum longitudinal steel reinforcement within strip footings: Two (2) No. 5 rebars (1 top and 1 bottom. Additional reinforcement may be necessary for structural considerations.
- Minimum foundation embedment: 12 inches into suitable structural fill soils, and at least 24 inches below adjacent exterior grade. Interior column footings may be placed immediately beneath the floor slab.
- It is recommended that the perimeter building foundations be continuous across all exterior doorways. Any flatwork adjacent to the exterior doors should be doweled into the perimeter foundations in a manner determined by the structural engineer.

The allowable bearing pressures presented above may be increased by 1/3 when considering short duration wind or seismic loads. The minimum steel reinforcement recommended above is based on geotechnical considerations; additional reinforcement may be necessary for structural considerations. The actual design of the foundations should be determined by the structural engineer.

Foundation Construction

The foundation subgrade soils should be evaluated at the time of overexcavation, as discussed in Section 6.3 of this report. It is further recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed structural fill, compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Any unsuitable materials should be removed to a depth of suitable bearing compacted structural fill, with the resulting excavations backfilled with compacted fill soils. As an alternative, lean concrete slurry (500 to 1,500 psi) may be used to backfill such isolated overexcavations.

The foundation subgrade soils should also be properly moisture conditioned to at least 2 to 4 percent of the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. Since it is typically not feasible to increase the moisture content of the floor slab and foundation subgrade soils once rough grading has been completed, care should be taken to maintain the moisture content of the building pad subgrade soils throughout the construction process.

Estimated Foundation Settlements

Post-construction total and differential settlements of shallow foundations designed and constructed in accordance with the previously presented recommendations are estimated to be less than 1.0 and 0.5 inches, respectively. Differential movements are expected to occur over a 30-foot span, thereby resulting in an angular distortion of less than 0.002 inches per inch.

Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slabs and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 300 lbs/ft^3
- Friction Coefficient: 0.30

These are allowable values, and include a factor of safety. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against compacted structural fill. The maximum allowable passive pressure is 3000 lbs/ft^2.

6.6 Floor Slab Design and Construction

Subgrades which will support new floor slabs should be prepared in accordance with the recommendations contained in the ***Site Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floor of the new structure may be constructed as a conventional slab-on-grade supported on newly placed structural fill, extending to a depth of at least 5 feet below existing grade. Based on geotechnical considerations, the floor slabs may be designed as follows:

- Minimum slab thickness: 5 inches.

- Minimum slab reinforcement: Not required for geotechnical considerations. The actual floor slab reinforcement should be determined by the structural engineer, based on the imposed loading.

- Modulus of Subgrade Reaction: k = 125 psi/in.

- Slab underlayment: If moisture sensitive floor coverings will be used then minimum slab underlayment should consist of a moisture vapor barrier constructed below the entire area of the proposed slab where such moisture sensitive floor coverings are expected. The moisture vapor barrier should meet or exceed the Class A rating as defined by ASTM E 1745-97 and have a permeance rating less than 0.01 perms as described in ASTM E 96-95 and ASTM E 154-88. A polyolefin material such as Stego® Wrap Vapor Barrier or equivalent will meet these specifications. The moisture vapor barrier should be properly constructed in accordance with all applicable manufacturer specifications. Given that a rock free subgrade is anticipated and that a capillary break is not required, sand below the barrier is not required. The need for sand and/or the amount of sand above the moisture vapor barrier should be specified by the structural engineer or concrete contractor. The selection of sand above the barrier is not a geotechnical engineering issue and hence outside our purview. Where moisture sensitive floor coverings are not anticipated, the vapor barrier may be eliminated.

- Moisture condition the floor slab subgrade soils to 2 to 4 percent above the Modified Proctor optimum moisture content, to a depth of 12 inches. The moisture content of the floor slab subgrade soils should be verified by the geotechnical engineer within 24 hours prior to concrete placement.

- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

The actual design of the floor slabs should be completed by the structural engineer to verify adequate thickness and reinforcement.

6.7 Retaining Wall Design and Construction

Although not indicated on the site plan, some small retaining walls (less than 3 to 4 feet in height) may be required to facilitate the new site grades. The parameters recommended for use in the design of these walls are presented below.

Retaining Wall Design Parameters

Based on the soil conditions encountered at the boring locations, the following parameters may be used in the design of new retaining walls for this site. We have provided parameters assuming the use of on-site soils for retaining wall backfill. The near surface soils generally consist of sands and silty sands. Based on their classifications, these soils are expected to possess a friction angle of at least 30 degrees when compacted to 90 percent of the ASTM-1557 maximum dry density.

If desired, SCG could provide design parameters for an alternative select backfill material behind the retaining walls. The use of select backfill material could result in lower lateral earth pressures. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the heel of the retaining wall upwards at an angle of approximately 60° from horizontal. If select backfill material behind the retaining wall is desired, SCG should be contacted for supplementary recommendations.

RETAINING WALL DESIGN PARAMETERS

Design Parameter		**Soil Type**
		On-Site Sands and Silty Sands
Internal Friction Angle (ϕ)		30°
Unit Weight		125 lbs/ft^3
Equivalent Fluid Pressure:	Active Condition (level backfill)	42 lbs/ft^3
	Active Condition (2h:1v backfill)	67 lbs/ft^3
	At-Rest Condition (level backfill)	63 lbs/ft^3

Regardless of the backfill type, the walls should be designed using a soil-footing coefficient of friction of 0.30 and an equivalent passive pressure of 300 lbs/ft^3. The structural engineer should incorporate appropriate factors of safety in the design of the retaining walls.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils that in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls that will not be allowed to deflect such as those which will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

Seismic Lateral Earth Pressures

In accordance with the 2013 CBC, any retaining walls more than 6 feet in height must be designed for seismic lateral earth pressures. If walls 6 feet or more are required for this site, the geotechnical engineer should be contacted for supplementary seismic lateral earth pressure recommendations.

Retaining Wall Foundation Design

The retaining wall foundations should be supported within newly placed compacted structural fill, extending to a depth of at least 2 feet below the proposed bearing grade. Foundations to support new retaining walls should be designed in accordance with the general Foundation Design Parameters presented in a previous section of this report.

Backfill Material

On-site soils may be used to backfill the retaining walls. However, all backfill material placed within 3 feet of the back wall face should have a particle size no greater than 3 inches. The retaining wall backfill materials should be well graded.

It is recommended that a properly installed prefabricated drainage composite such as the MiraDRAIN 6000XL (or approved equivalent), which is specifically designed for use behind retaining walls be used. If the drainage composite material is not covered by an impermeable surface, such as a structure or pavement, a 12-inch thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils. The drainage composite should be separated from the backfill soils by a suitable geotextile, approved by the geotechnical engineer.

All retaining wall backfill should be placed and compacted under engineering controlled conditions in the necessary layer thicknesses to ensure an in-place density between 90 and 93 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent drainage system will be necessary in conjunction with the appropriate backfill material. Subsurface drainage may consist of either:

- A weep hole drainage system typically consisting of a series of 4-inch diameter holes in the wall situated slightly above the ground surface elevation on the exposed side of the wall and at an approximate 8-foot on-center spacing. The weep holes should

include a 2 cubic foot pocket of open graded gravel, surrounded by an approved geotextile fabric, at each weep hole location.

- A 4-inch diameter perforated pipe surrounded by 2 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be extended to daylight or tied into a storm drainage system.

6.8 Pavement Design Parameters

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

Pavement Subgrades

It is anticipated that the new pavements will be supported on a layer of existing soils which have been scarified, thoroughly moisture conditioned and recompacted. The near surface soils generally consist of sands and silty sands with varying gravel content. Based on their classification, these materials are expected to possess good pavement support characteristics, with R-values in the range of 60 to 70. Since R-value testing was not included in the scope of services for this project, the subsequent pavement design is based upon a conservatively assumed R-value of 60. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering controlled conditions. It may be desirable to perform R-value testing after the completion of rough grading to verify the R-value of the as-graded parking subgrade.

Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20 year design life, assuming six operational traffic days per week.

Traffic Index	No. of Heavy Trucks per Day
4.0	0
5.0	1
6.0	3
7.0	11
8.0	35
9.0	93

For the purpose of the traffic volumes indicated above, a truck is defined as a 5-axle tractor trailer unit with one 8-kip axle and two 32-kip tandem axles. All of the traffic indices allow for 1,000 automobiles per day.

ASPHALT PAVEMENTS (R=60)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	3	3	3	3	4
Compacted Subgrade	12	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the Marshall maximum density, as determined by ASTM D-2726. The aggregate base course may consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

PORTLAND CEMENT CONCRETE PAVEMENTS (R=60)				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	6	7	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness. The actual joint spacing and reinforcing of the Portland cement concrete pavements should be determined by the structural engineer.

7.0 GENERAL COMMENTS

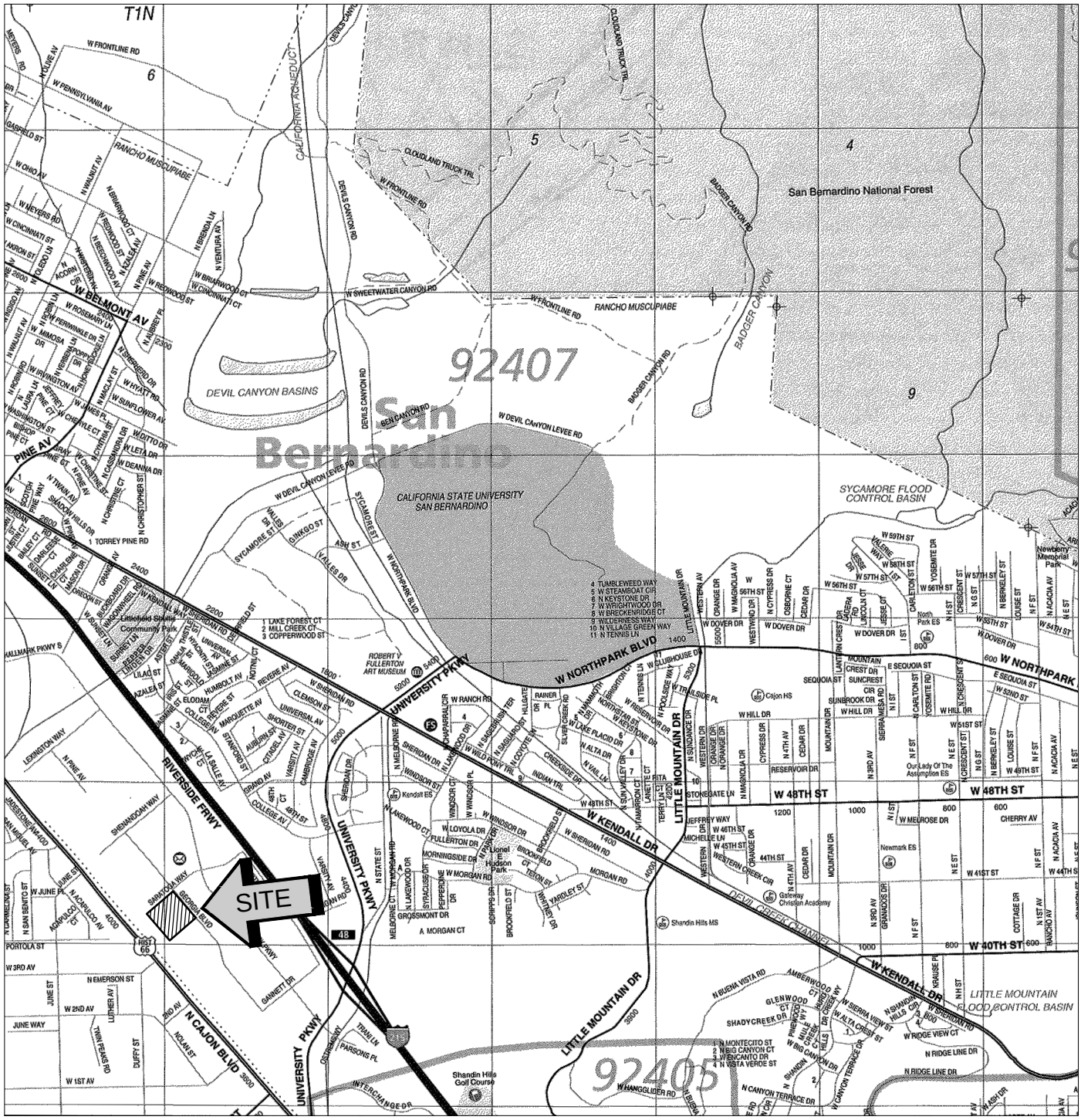
This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The client(s)' reliance upon this report is subject to the Engineering Services Agreement, incorporated into our proposal for this project.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

APPENDIX A



SOURCE: SAN BERNARDINO COUNTY
THOMAS GUIDE, 2013

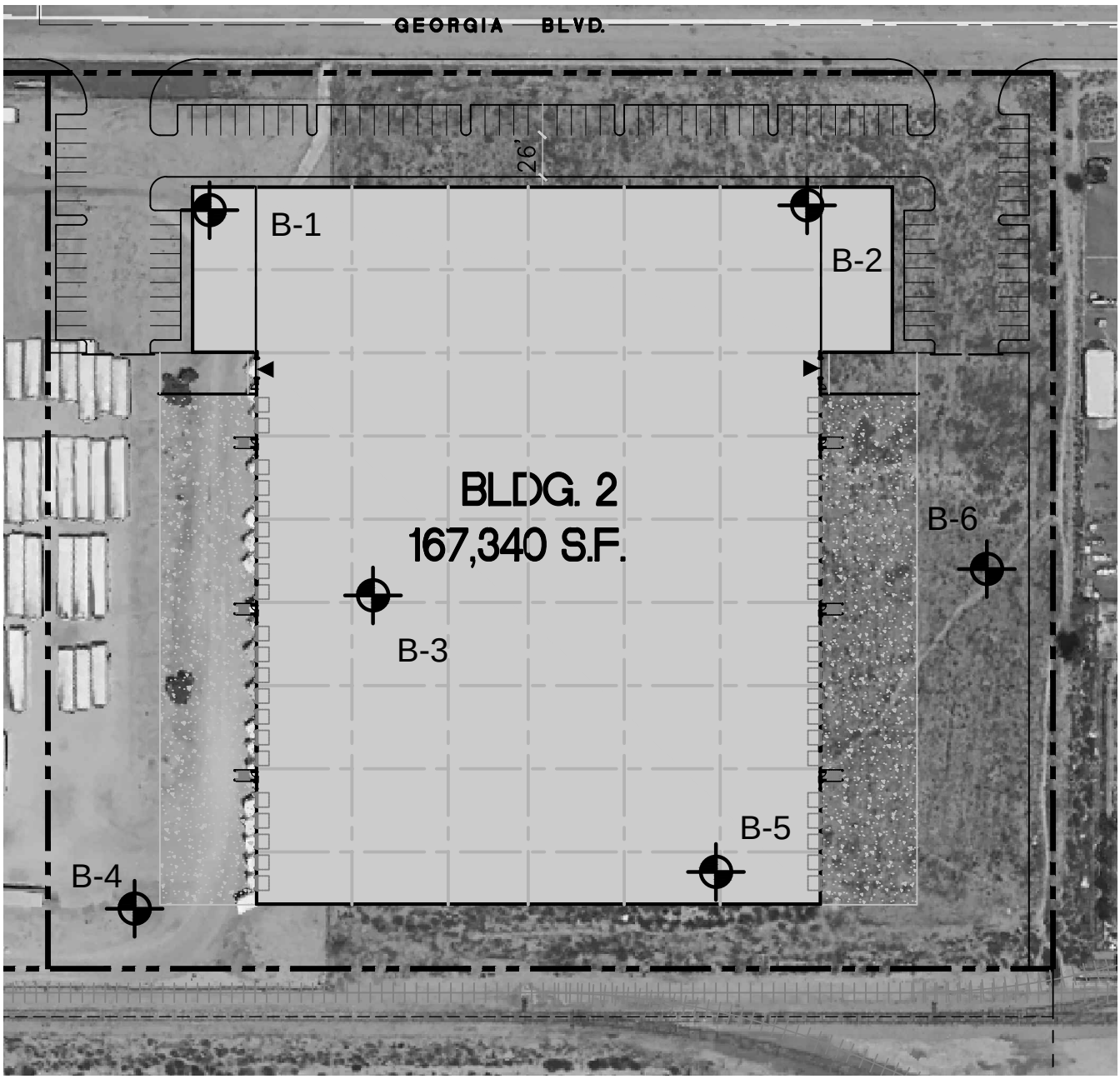
SITE LOCATION MAP

PROPOSED COMMERCIAL/INDUSTRIAL BUILDING

SAN BERNARDINO, CALIFORNIA

SCALE: 1" = 2400'	
DRAWN: JL CHKD: JAS	
SCG PROJECT 15G205-1	
PLATE 1	

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

APPROXIMATE BORING LOCATION

NOTE: BASE MAP PREPARED BY HPA.

BORING LOCATION PLAN
PROPOSED COMMERCIAL/INDUSTRIAL BUILDING
SAN BERNARDINO, CALIFORNIA
SCALE: 1" = 100'
DRAWN: PM CHKD: JAS
SCG PROJECT 15G205-1
PLATE 2

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX B

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 15G205
PROJECT: Proposed C/I Bldg
LOCATION: San Bernardino, California

DRILLING DATE: 10/30/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Joseph Lozano Leon

WATER DEPTH:
CAVE DEPTH: 7 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					2± inches Asphaltic concrete, 3± inches Aggregate base							
	X	34			FILL: Brown fine to coarse Sand, trace Silt, little fine to coarse Gravel, medium dense-dry to damp	109	2					
	X	39				122	2					
5	X	24			ALLUVIUM: Light Gray fine to coarse Sand, little Silt, medium dense-dry to damp	101	2					
	X	22			Gray Brown fine to coarse Sand, trace Silt, trace fine Gravel, medium dense to dense-dry to damp	103	2					
10	X	25				114	3					
15	X	57										No Sample Recovered
					Dark Gray fine to coarse Sand, some fine to coarse Gravel, occasional Granite fragments, very dense-dry to damp							
20	X	62/5"				117	2					
25	X	50/6"				119	3					
					Boring Terminated at 25'							

TBL 15G205.GPJ SOCALGEO.GDT 11/24/15

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-2

JOB NO.: 15G205
PROJECT: Proposed C/I Bldg
LOCATION: San Bernardino, California

DRILLING DATE: 10/30/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Joseph Lozano Leon

WATER DEPTH:
CAVE DEPTH: 10 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	20			ALLUVIUM: Light Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, dense-dry		2					
	X	12			Light Brown fine to medium Sand, little Silt, medium dense-dry to damp		2					
5												
	X	22			Light Gray Brown fine to coarse Sand, some Silt, trace fine Gravel, medium dense-dry to damp		2					
	X	23					1					
10												
					Light Gray fine to coarse Sand, some fine Gravel, trace Silt, very dense-dry							
	X	84					1					
15												
					Gray Brown fine to coarse Sand, trace Silt, some fine to coarse Gravel, very dense-dry							
	X	52					1					
20												
					Boring Terminated at 20'							

TBL 15G205.GPJ SOCALGEO.GDT 11/24/15

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-3

JOB NO.: 15G205
PROJECT: Proposed C/I Bldg
LOCATION: San Bernardino, California

DRILLING DATE: 10/30/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Joseph Lozano Leon

WATER DEPTH:
CAVE DEPTH: 11 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	22			FILL: Brown Silty fine to medium Sand, trace fine Gravel, medium dense-damp	113	3					
	X	39				116	3					
5	X	35				116	7					
	X	23			FILL: Dark Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp	111	5					
10	X	84/10"			POSSIBLE FILL: Dark Brown Silty fine to coarse Sand, well cemented, very dense-damp	134	6					
					ALLUVIUM: Light Gray Brown fine to coarse Sand, some fine to coarse Gravel, medium dense-dry to damp							
15	X	24				117	2					
					Boring Terminated at 15'							

TBL 15G205.GPJ SOCALGEO.GDT 11/24/15

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 15G205
PROJECT: Proposed C/I Bldg
LOCATION: San Bernardino, California

DRILLING DATE: 10/30/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Joseph Lozano Leon

WATER DEPTH:
CAVE DEPTH: 10 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	32			FILL: Dark Brown Silty fine to medium Sand, trace fine Gravel, medium dense-damp		4					
	X	21					4					
5												
	X	9			FILL: Dark Brown Silty fine Sand, trace coarse Sand, loose-damp		7					
	X	12			POSSIBLE FILL: Light Brown Silty fine to coarse Sand, trace fine to coarse Gravel, medium dense-damp		3					
10												
					ALLUVIUM: Dark Gray Brown fine to coarse Sand, little Silt, little fine to coarse Gravel, medium dense to dense-dry to damp							
	X	29					3					
15												
	X	63					2					
20												
					Boring Terminated at 20'							

TBL 15G205.GPJ SOCALGEO.GDT 11/24/15

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-5

JOB NO.: 15G205
PROJECT: Proposed C/I Bldg
LOCATION: San Bernardino, California

DRILLING DATE: 10/30/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Joseph Lozano Leon

WATER DEPTH:
CAVE DEPTH: 8 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					FILL: Gray Brown Silty fine to coarse Sand, trace fine to coarse Gravel, medium dense to dense-damp to moist							
	X	30				103	2					
	X	52				107	3					
5	X	43				120	5					
	X	31				108	7					
					POSSIBLE FILL: Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
	X	27				114	5					
10												
	X	26				107	4					
15					Gray fine to coarse Sand, some Silt, some fine to coarse Gravel, medium dense to very dense-dry to damp							
	X	32				111	1					
20												
	X	79										No Sample Recovered
25												
	X	92/10"										No Sample Recovered
30	X	59					2					
					Boring Terminated at 31½'							

TBL 15G205.GPJ SOCALGEO.GDT 11/24/15

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-6

JOB NO.: 15G205
PROJECT: Proposed C/I Bldg
LOCATION: San Bernardino, California

DRILLING DATE: 10/30/15
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Joseph Lozano Leon

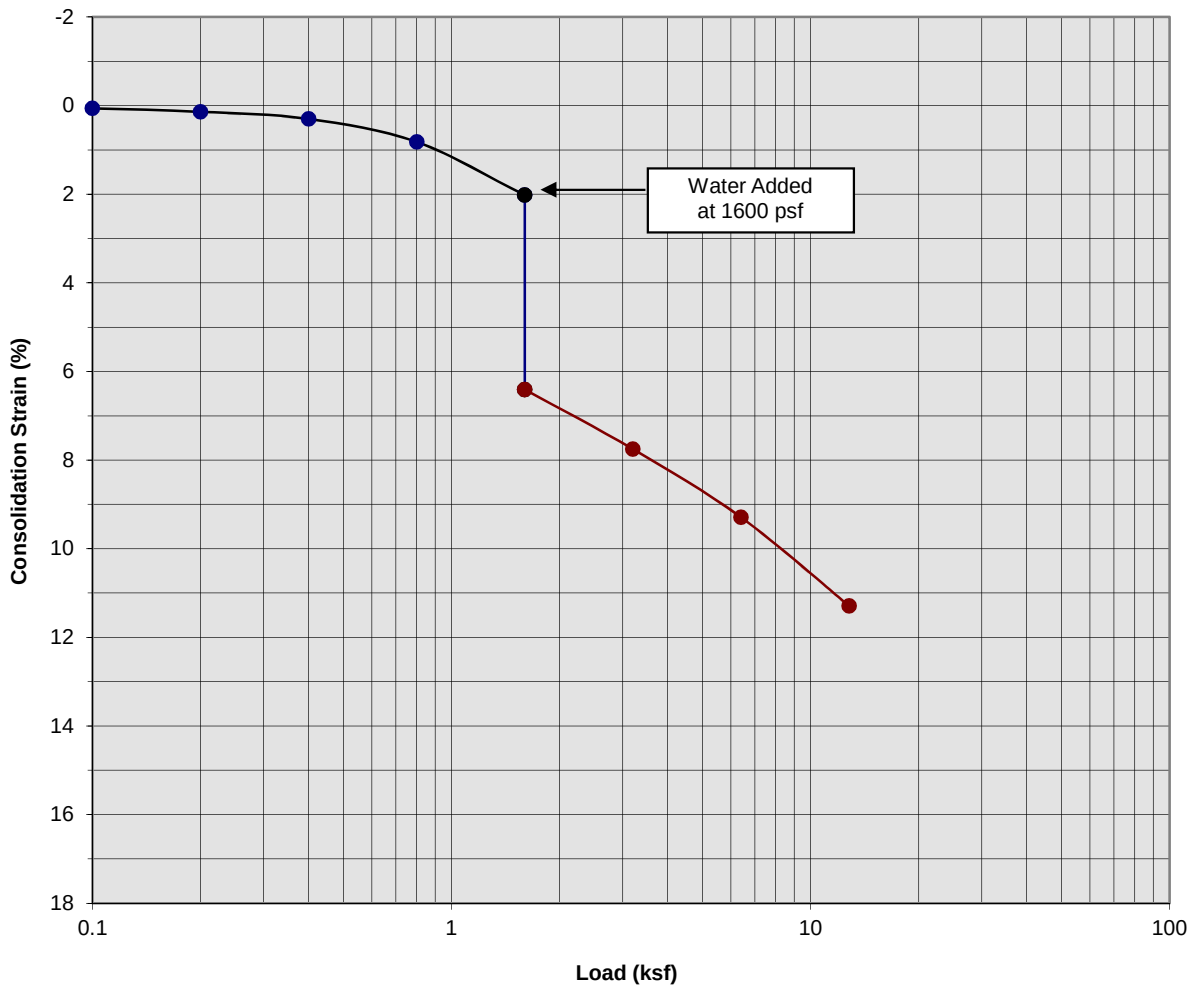
WATER DEPTH:
CAVE DEPTH: 7 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	35			FILL: Light Brown Silty fine to medium Sand, trace fine to coarse Gravel, dense-dry to damp		2					
	X	21			FILL: Brown Silty fine to medium Sand, trace fine Gravel, medium dense-damp		3					
5					Boring Terminated at 5'							

TBL 15G205.GPJ SOCALGEO.GDT 11/24/15

APPENDIX C

Consolidation/Collapse Test Results

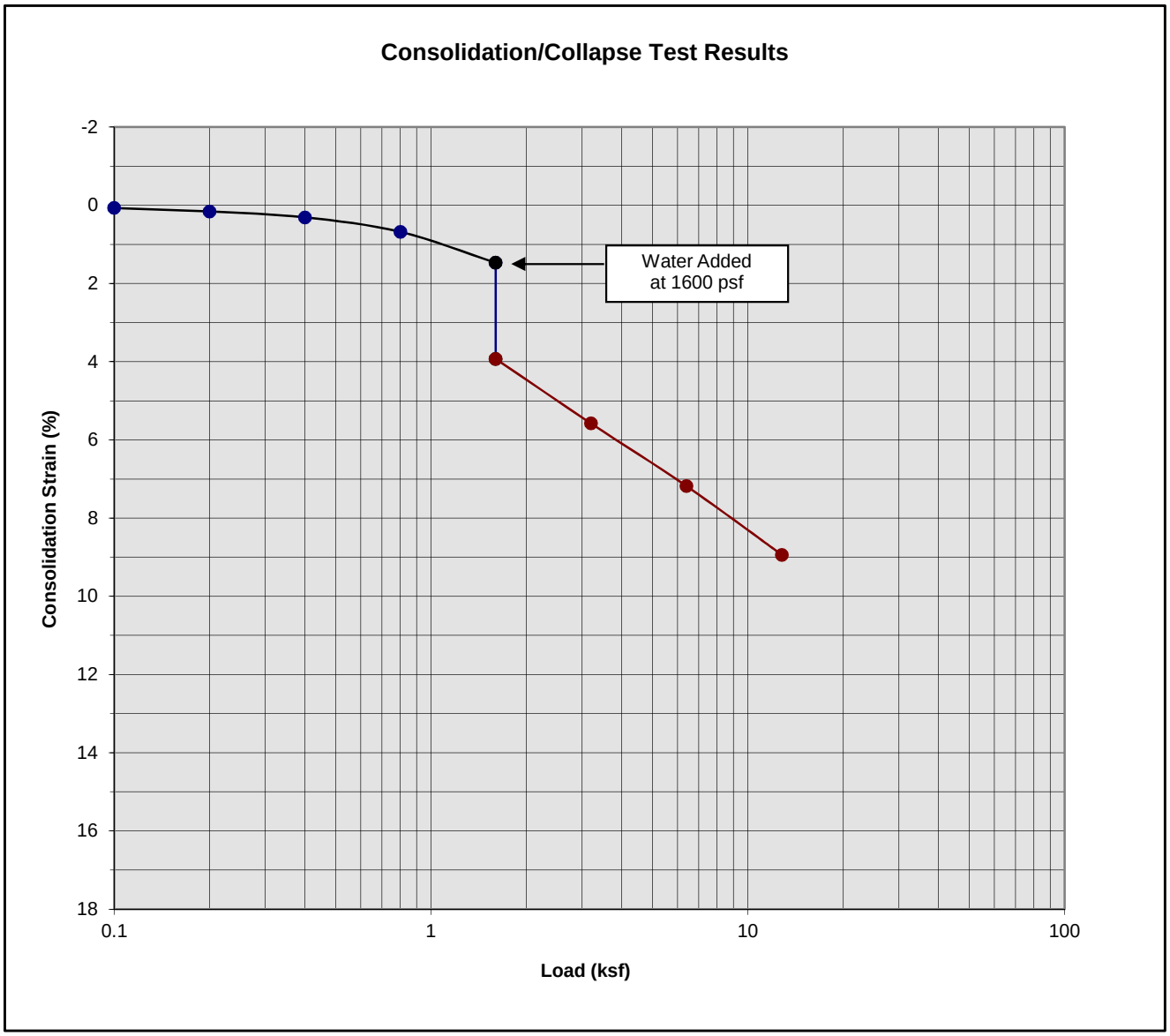


Classification: FILL: Gray Brown Silty fine to coarse Sand, trace fine to coarse Gravel

Boring Number:	B-5	Initial Moisture Content (%)	3
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	3 to 4	Initial Dry Density (pcf)	107.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.39

Proposed C/I Bldg
San Bernardino, California
Project No. 15G205
PLATE C- 1

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

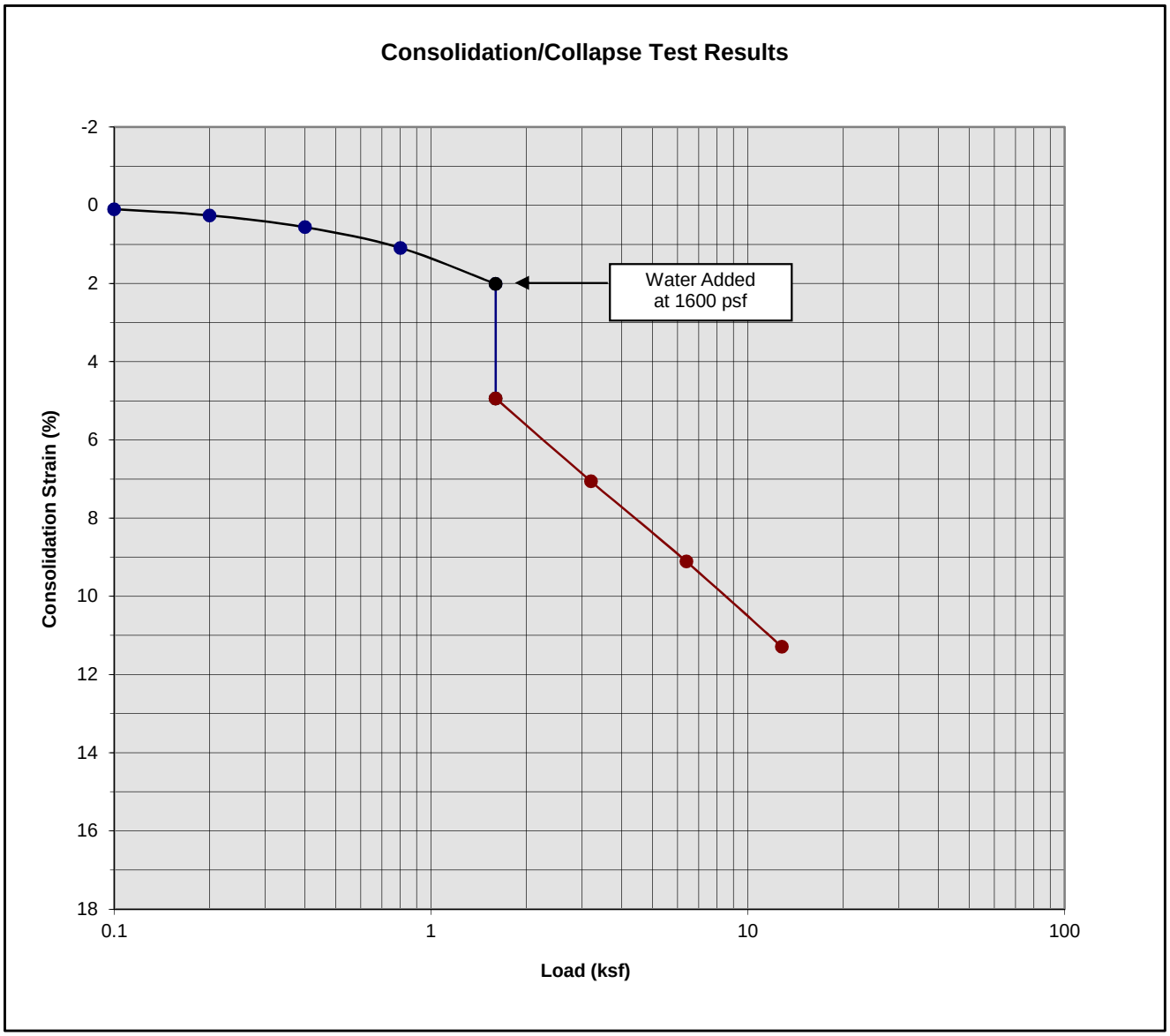


Classification: FILL: Gray Brown Silty fine to coarse Sand, trace fine to coarse Gravel

Boring Number:	B-5	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	11
Depth (ft)	5 to 6	Initial Dry Density (pcf)	120.2
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	131.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.46

Proposed C/I Bldg
San Bernardino, California
Project No. 15G205
PLATE C- 2

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

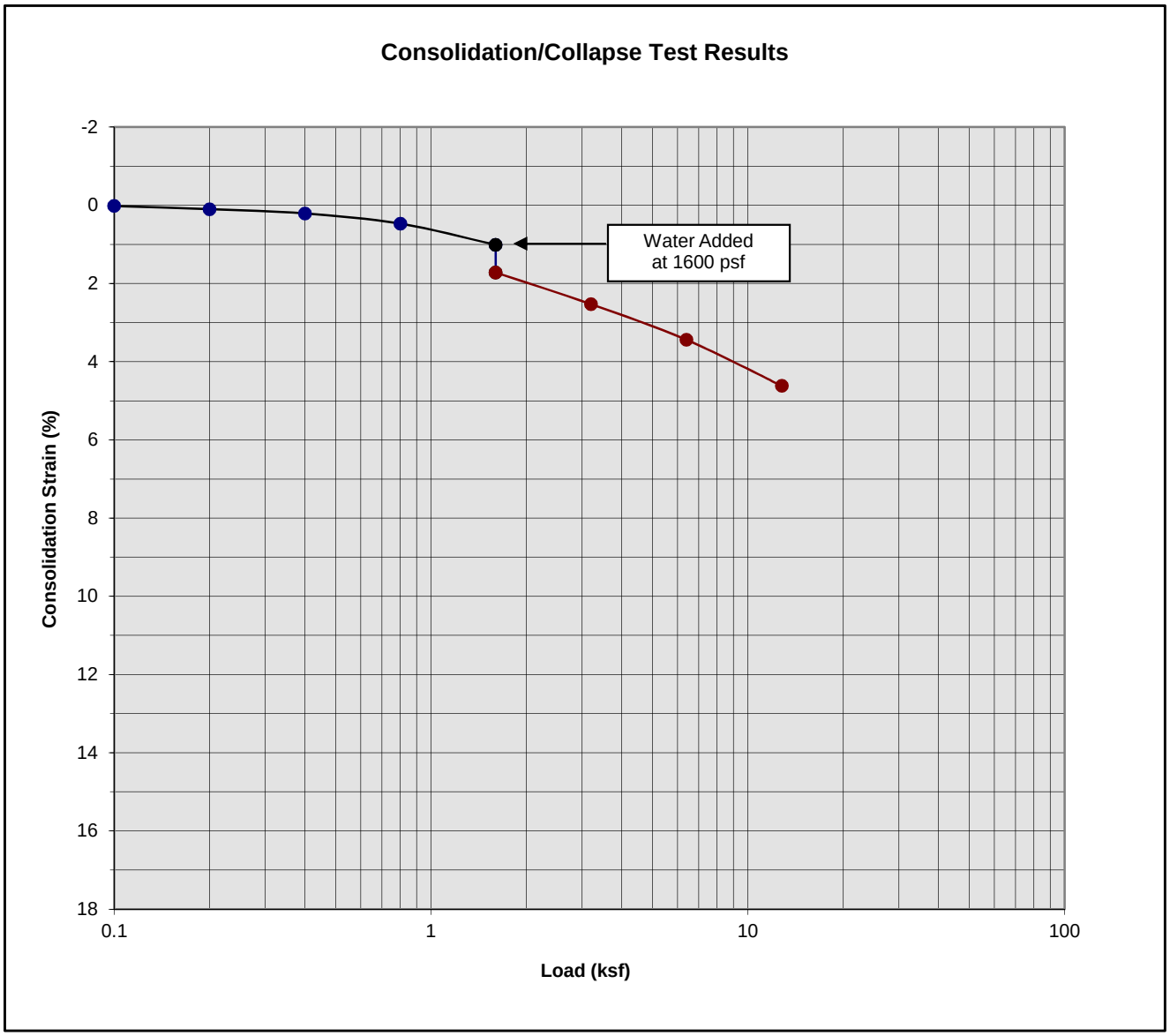


Classification: FILL: Gray Brown Silty fine to coarse Sand, trace fine to coarse Gravel

Boring Number:	B-5	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	7 to 8	Initial Dry Density (pcf)	108.1
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.93

Proposed C/I Bldg
San Bernardino, California
Project No. 15G205
PLATE C- 3

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

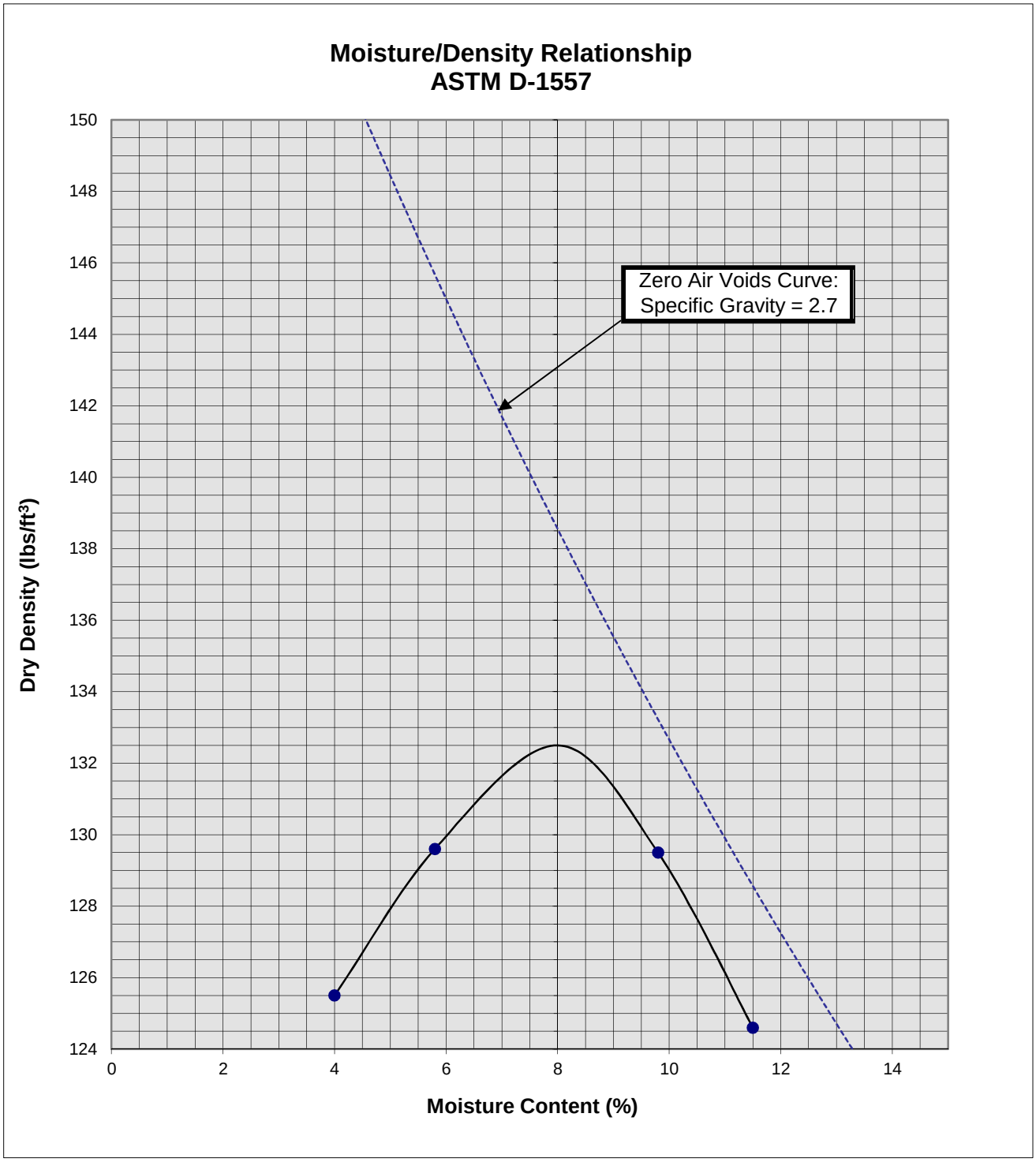


Classification: POSSIBLE FILL: Brown Silty fine Sand, trace medium to coarse Sand

Boring Number:	B-5	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	9 to 10	Initial Dry Density (pcf)	114.1
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.6
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.71

Proposed C/I Bldg
San Bernardino, California
Project No. 15G205
PLATE C- 4

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation



Soil ID Number	B-3 @ 0 to 5'
Optimum Moisture (%)	8
Maximum Dry Density (pcf)	132.5
Soil Classification	Dark Brown Silty fine to medium Sand, trace fine to coarse Gravel

Proposed C/I Bldg
San Bernardino, California
Project No. 15G205
PLATE C-5

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

APPENDIX D

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.

- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.

- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.

- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.

- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.

- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as "contaminated," and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.

- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:

    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.

    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or

concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.

- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

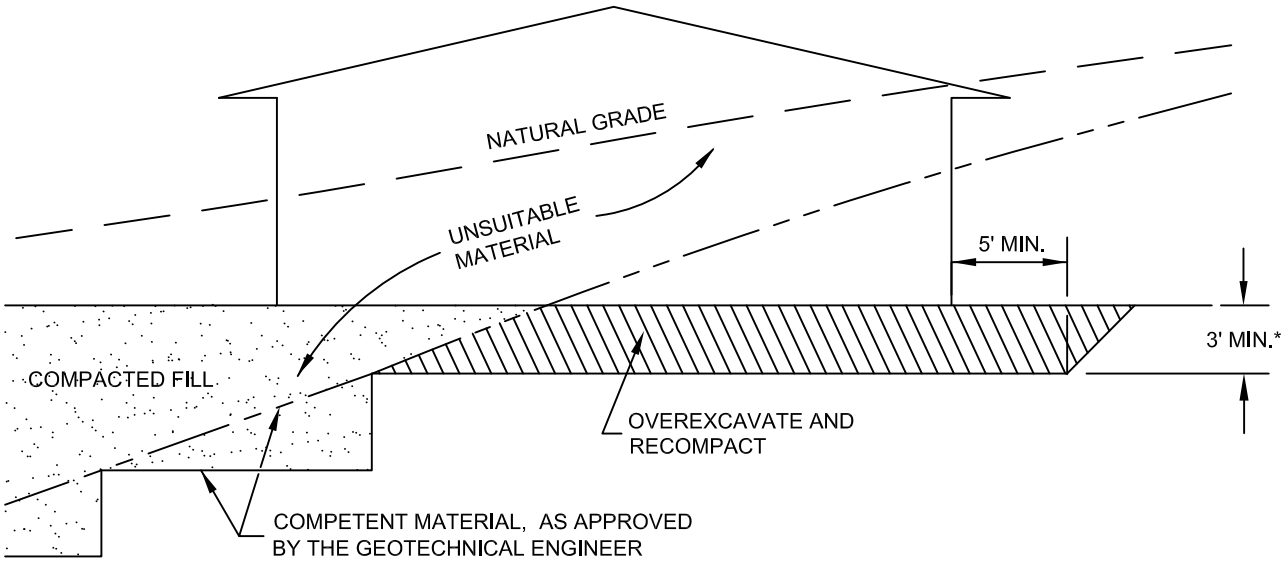
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

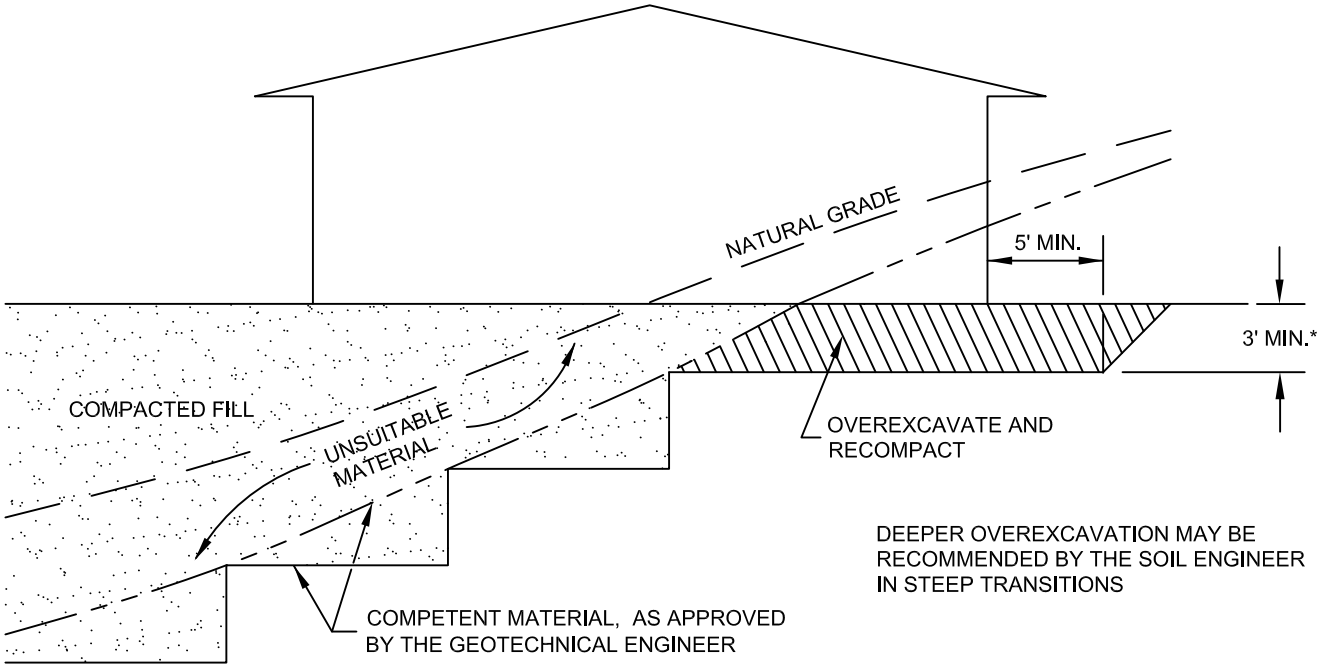
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION. ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

TRANSITION LOT DETAIL

GRADING GUIDE SPECIFICATIONS

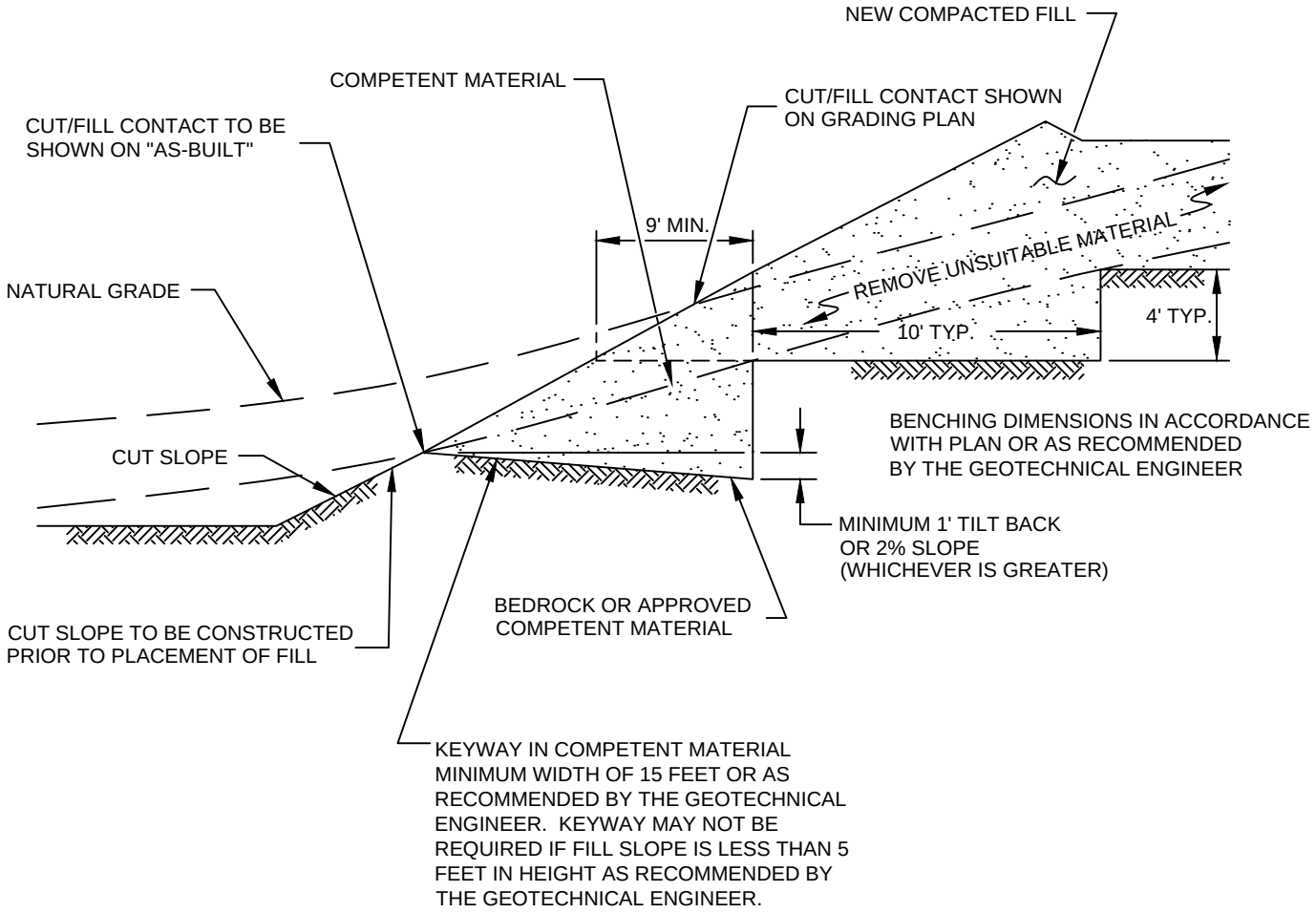
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-1

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



FILL ABOVE CUT SLOPE DETAIL

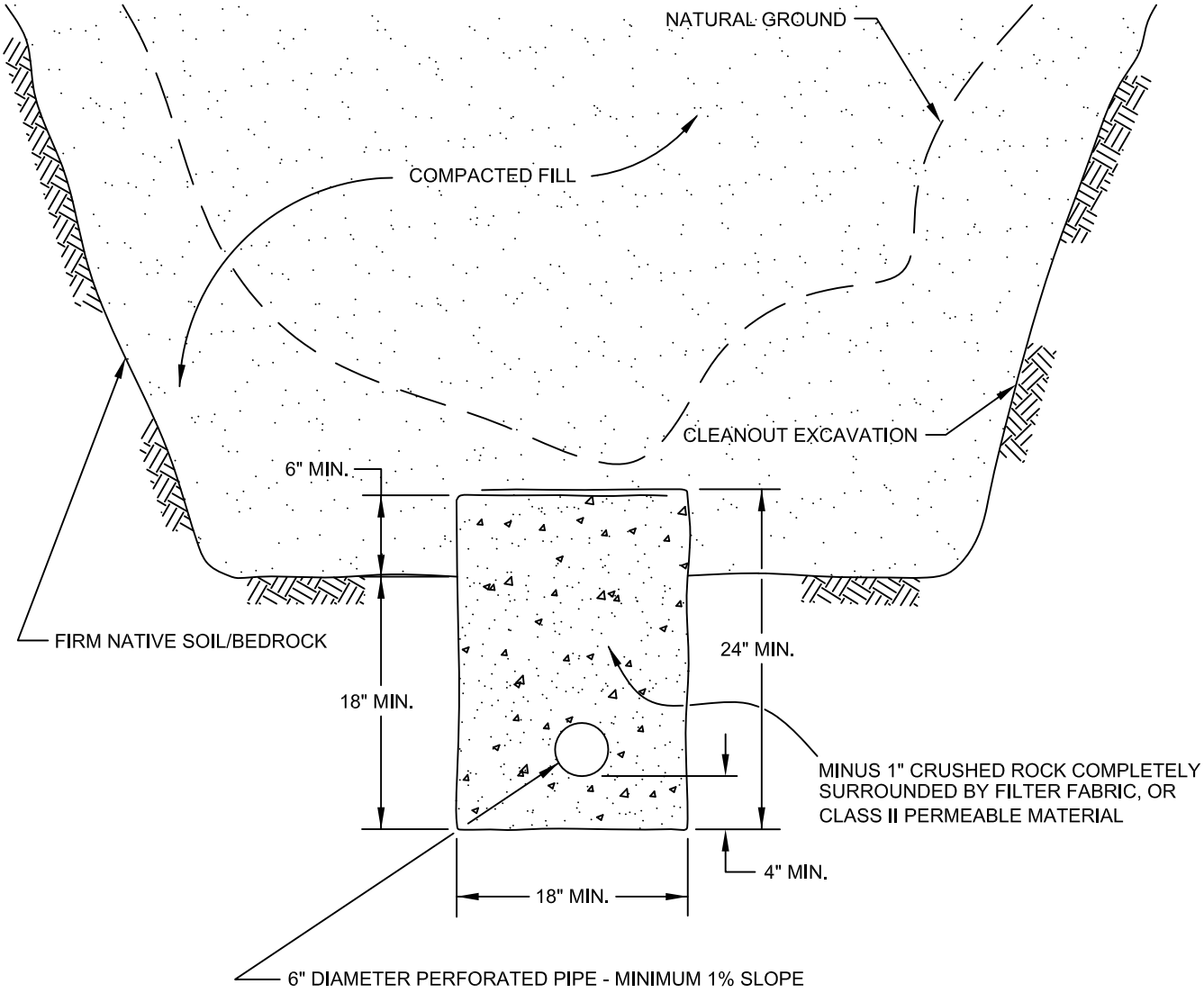
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL

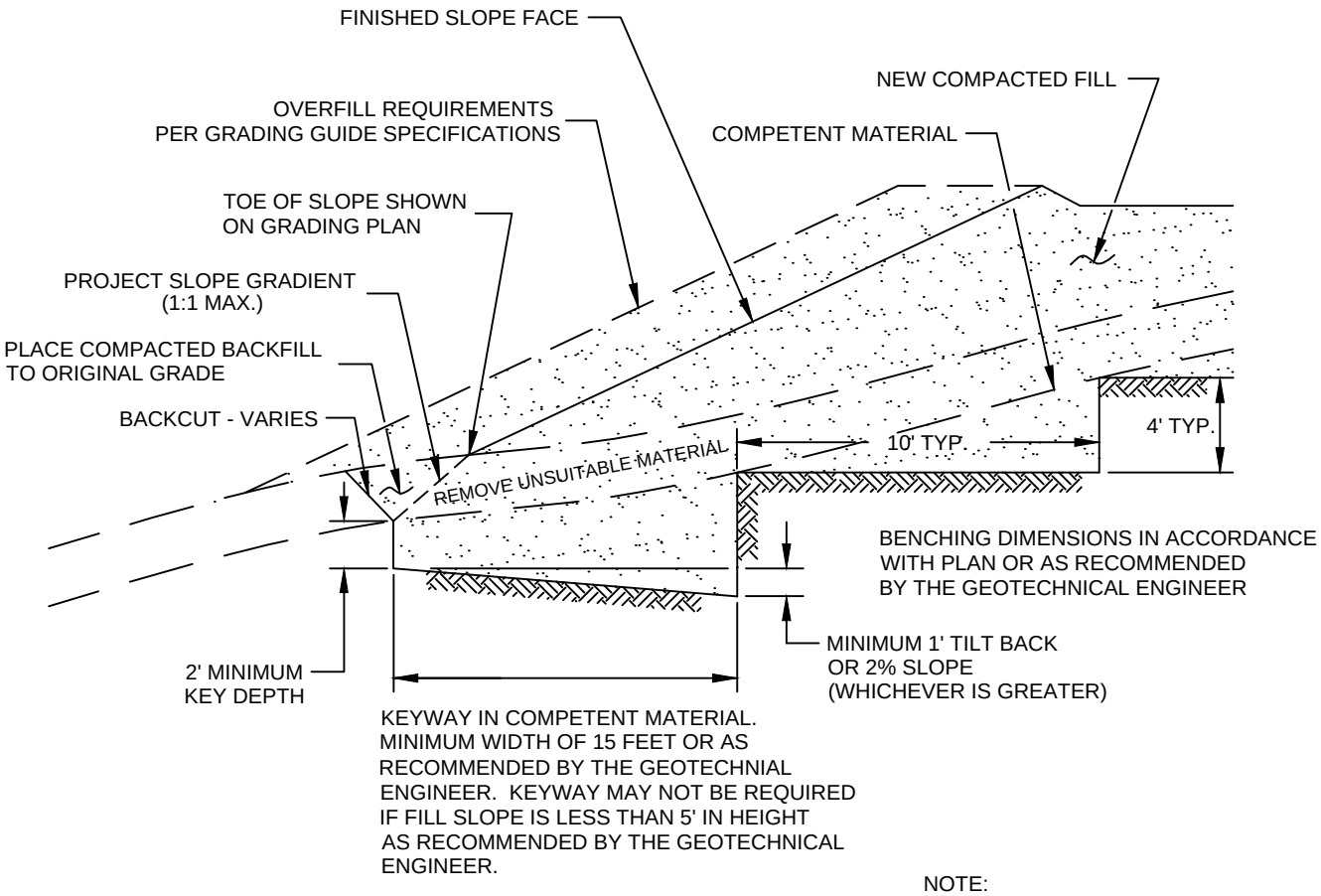
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-3

SOUTHERN CALIFORNIA GEOTECHNICAL



NOTE:
BENCHING SHALL BE REQUIRED
WHEN NATURAL SLOPES ARE
EQUAL TO OR STEEPER THAN 5:1
OR WHEN RECOMMENDED BY
THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

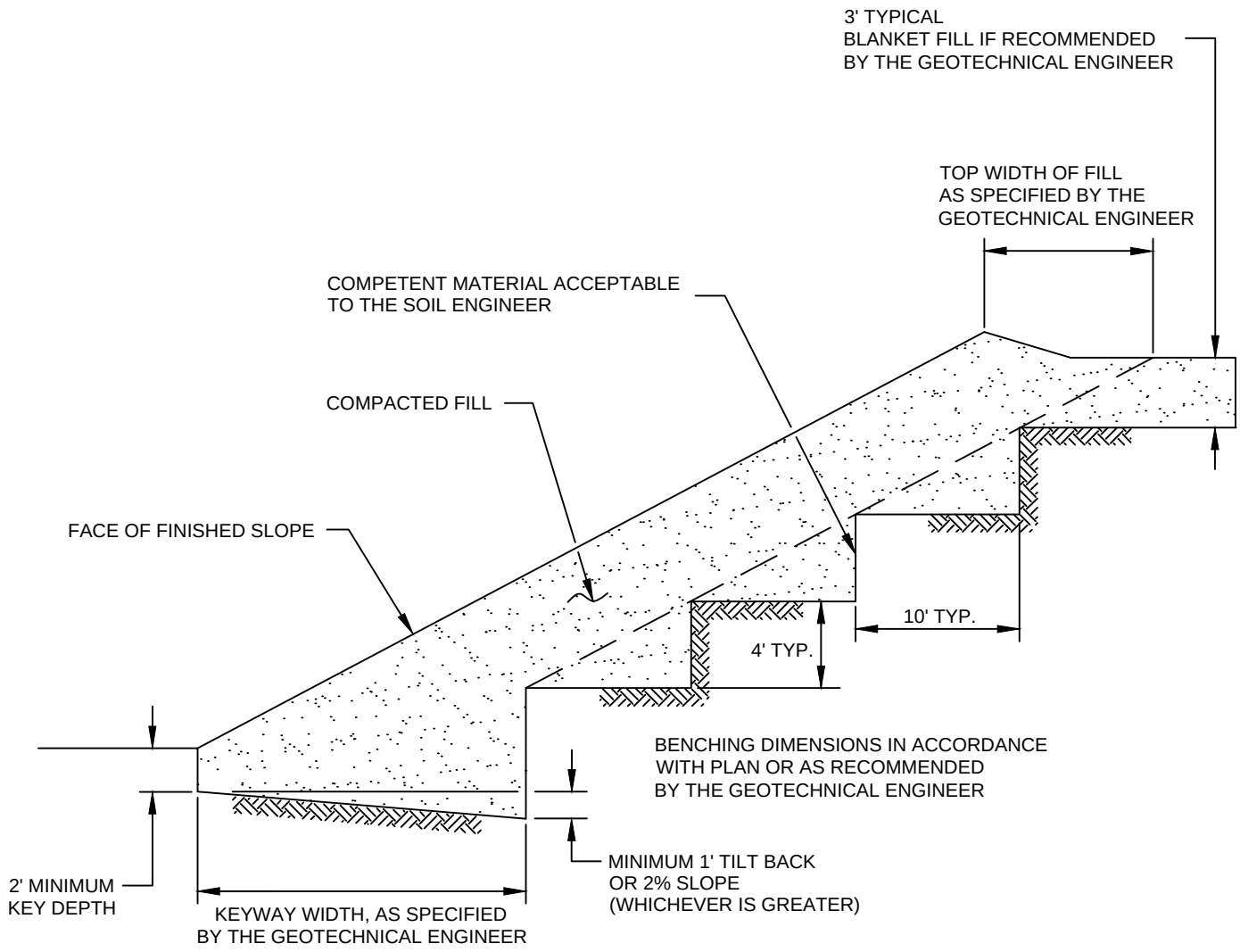
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



STABILIZATION FILL DETAIL

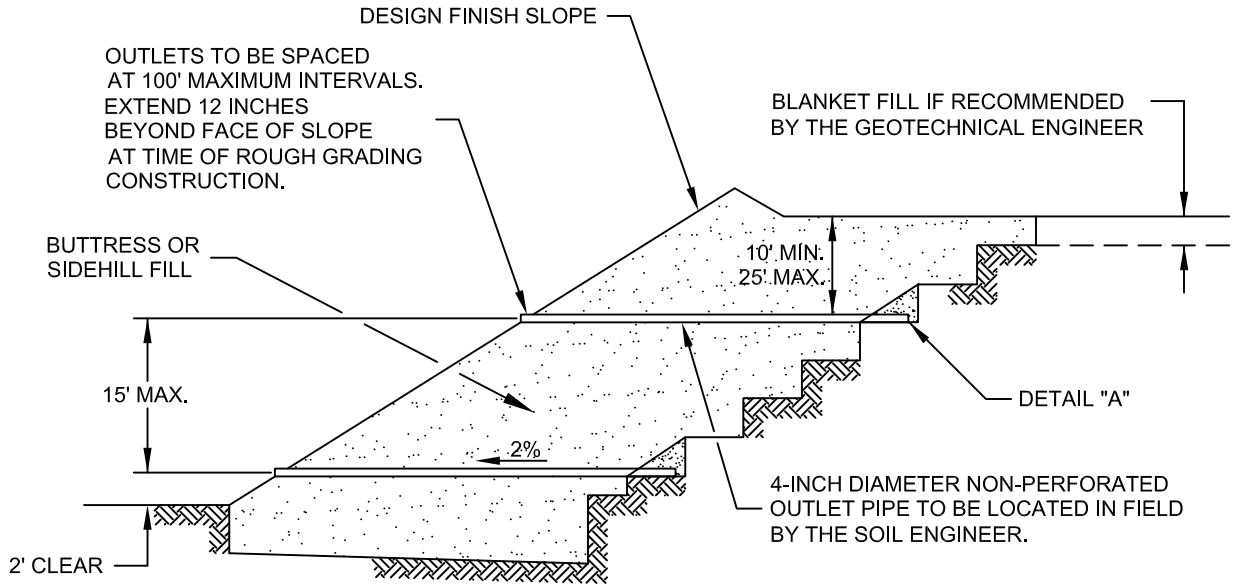
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-5

SOUTHERN CALIFORNIA GEOTECHNICAL



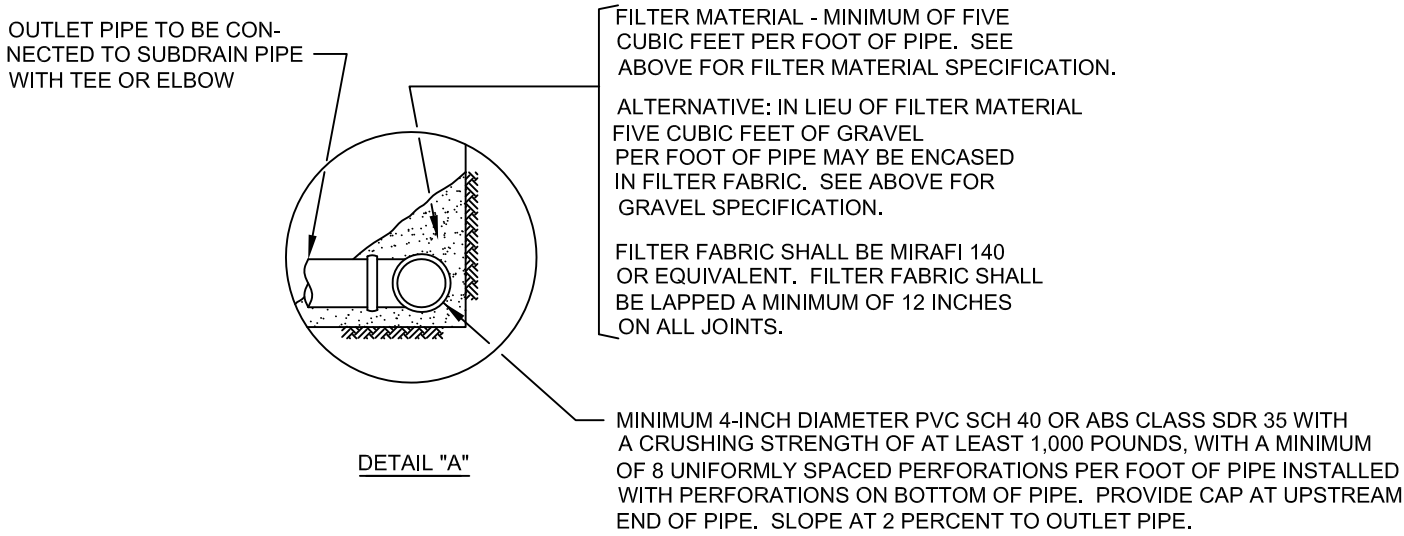
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

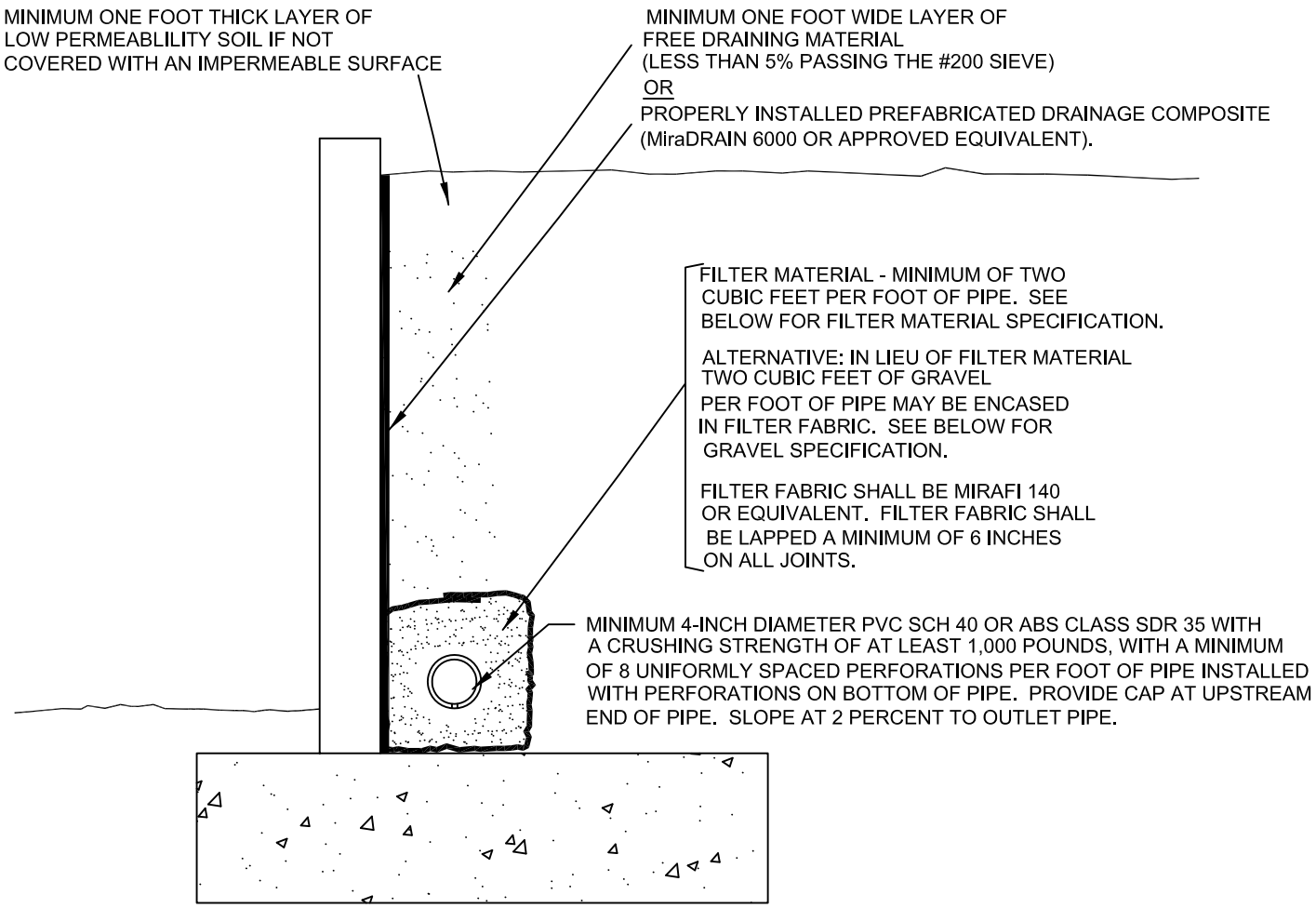
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-6

SOUTHERN CALIFORNIA GEOTECHNICAL



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

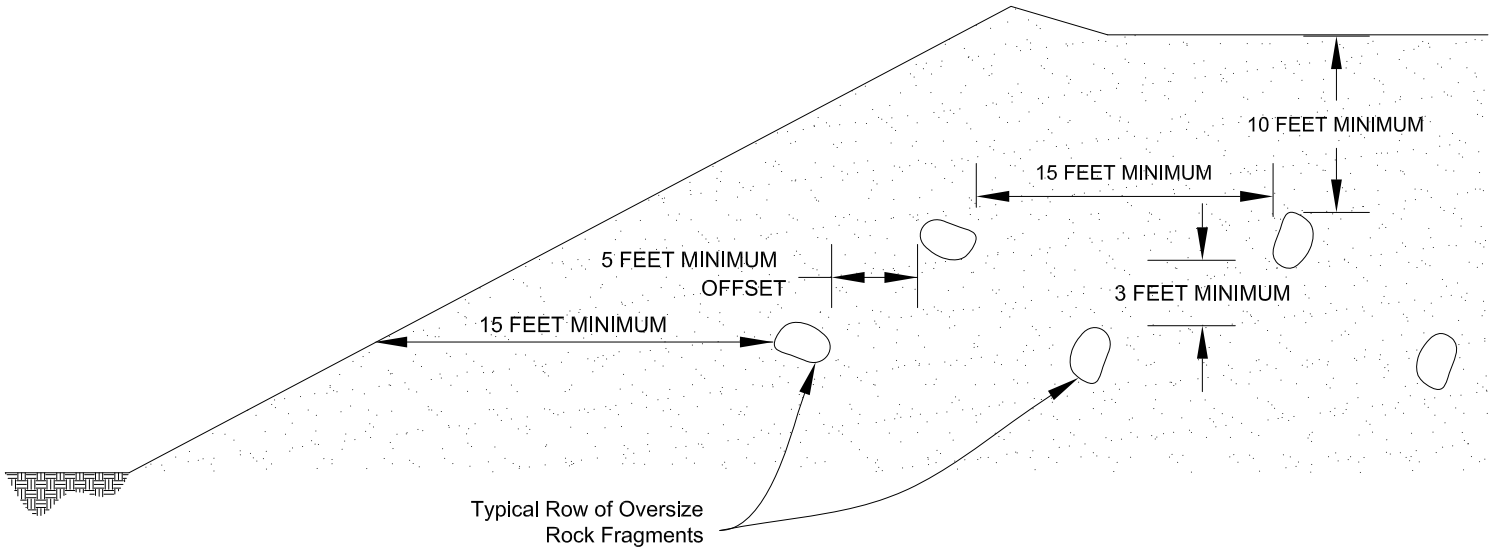
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

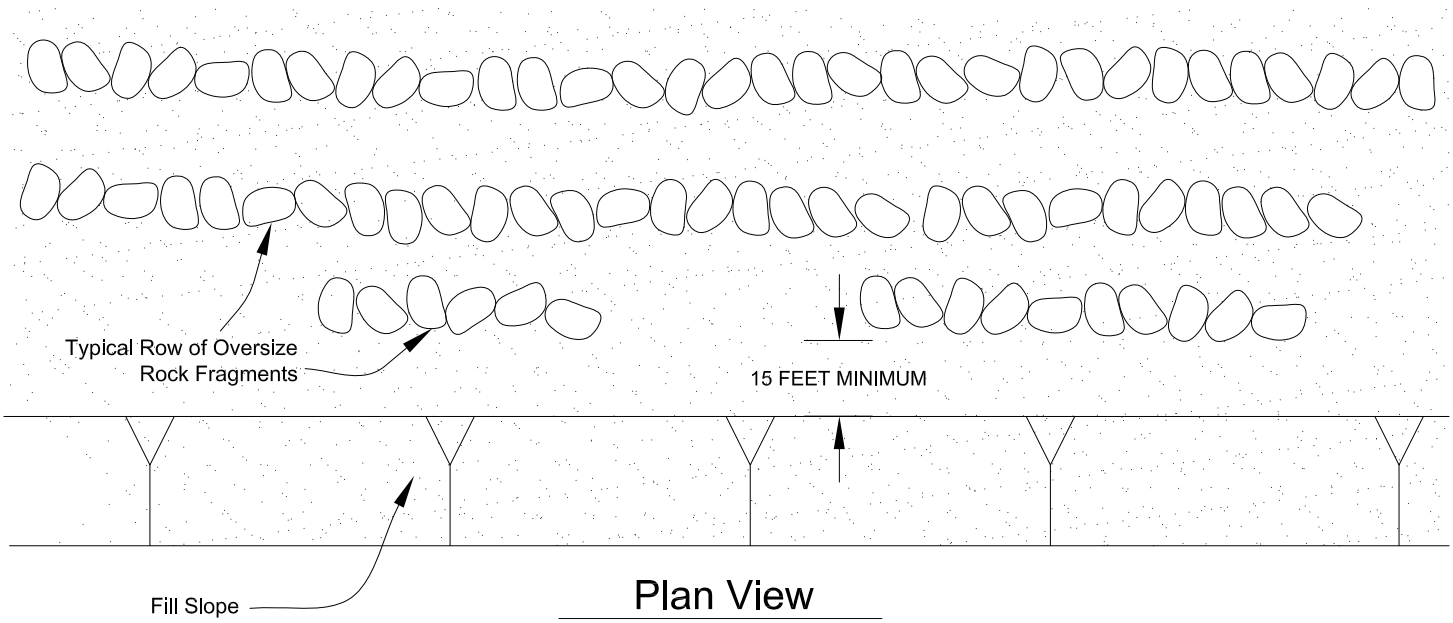
DRAWN: JAS
CHKD: GKM

PLATE D-7

SOUTHERN CALIFORNIA GEOTECHNICAL



Section View



Plan View

PLACEMENT OF OVERSIZED MATERIAL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: PM
CHKD: GKM

PLATE D-8

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX E

USGS Design Maps Summary Report

User–Specified Input

Building Code Reference Document ASCE 7-10 Standard
(which utilizes USGS hazard data available in 2008)

Site Coordinates 34.16743°N, 117.34256°W

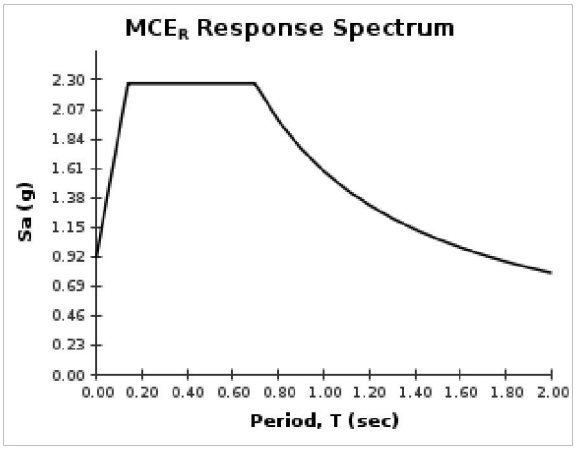
Site Soil Classification Site Class D – "Stiff Soil"

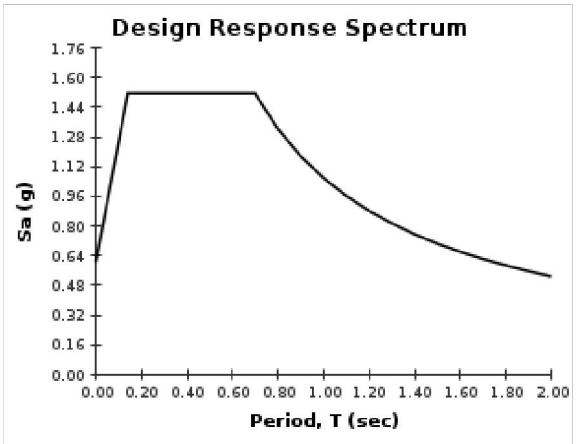
Risk Category I/II/III

USGS–Provided Output

S_S =	2.273 g	S_{MS} =	2.273 g	S_{DS} =	1.515 g
S_1 =	1.058 g	S_{M1} =	1.587 g	S_{D1} =	1.058 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.





SOURCE: U.S. GEOLOGICAL SURVEY (USGS)
<http://geohazards.usgs.gov/designmaps/us/application.php>

SEISMIC DESIGN PARAMETERS
PROPOSED COMMERCIAL/INDUSTRIAL BUILDING
SAN BERNARDINO, CALIFORNIA

DRAWN: PM
CHKD: JAS
SCG PROJECT
15G205-1
PLATE E-1

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX D

Global Climate Change Report

GLOBAL CLIMATE CHANGE

150K Distribution Center
City of San Bernardino, CA

Prepared By:

Ldn Consulting, Inc.

42428 Chisolm Trail
Murrieta, California 92562
(760) 473-1253

Project For:

Kimley-Horn
401 B Street, Suite 600
San Diego, CA 92101

May 12, 2016

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LIST OF ACRONYMS

Assembly Bill 32 (AB32)

Business as Usual (BAU)

California Air Pollution Control Officers Association's (CAPCOA)

California Air Resource Board (CARB)

California Climate Action Registry General Reporting Protocol Version 3.1 (CCARGRPV3.1)

California Energy Commission (CEC)

California Environmental Quality Act (CEQA)

Carbon Dioxide (CO2)

Cubic Yards (CY)

Environmental Protection Agency (EPA)

Green House Gas (GHG)

International Residential Code (IRC)

Low Carbon Fuel Standard (LCFS)

Methane (CH4)

Nitrous Oxide (N2O)

South Coast Air Basin (SCAB)

South Coast Air Quality Management District (SCAQMD)

Senate Bill 97 (SB97)

Vehicle Miles Traveled (VMT)

EXECUTIVE SUMMARY

This analysis has been completed in order to quantify Greenhouse Gas (GHG) emissions from the project site and was prepared according to guidelines established within the California Global Warming Solutions Act of 2006 – Assembly Bill 32 (AB32), Senate Bill 97 (SB97), California Environmental Quality Act (CEQA) and the County of Riverside's Guidelines. Greenhouse Gasses analyzed in this study are Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O). To simplify greenhouse gas calculations, both CH_4 and N_2O are converted to equivalent amounts of CO_2 and are identified as CO_2e.

The proposed development project site is located between Georgia Boulevard and Cajon Boulevard in the South Coast Air Basin (SCAB) within the City of San Bernardino. The project will construct a 153,010 square foot (SF) building for warehouse/distribution of which approximately 5,000 SF would be used for office space and will be built on 8.1 acre site. Construction of the project is expected to commence early 2017 and take around 12 months to complete.

The proposed project would generate approximately 1,578.3 Metric Tons (MT) of CO_2e each year which is less than the lowest screening thresholds established by South Coast Air Quality Management District (SCAQMD) tiered approach of 3,000 MT for mixed use projects, 3,500 MT for residential projects and 10,000 MT for industrial projects. Since the project wouldn't exceed the screening thresholds, the project would not be expected to implement mitigation measures to reduce GHG emissions by 15% as proposed by the City of San Bernardino to the San Bernardino Associated Government (SANBAG) San Bernardino County Regional GHG Reduction Plan. Furthermore, the project is an industrial project and since emissions are so low would also meet the industrial screening thresholds of 10,000 MT. Given this, there would be neither direct nor indirect impacts under CEQA. Therefore, the project would not require further analysis or mitigation.

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this Green House Gas Assessment (GHG) is to show conformance to the California Global Warming Solutions Act of 2006 – Assembly Bill 32 (AB32) and Senate Bill 97 (SB97). AB32 requires that by 2020 the state's greenhouse gas emissions be reduced to 1990 levels and by 2050 reduced to 80% below 1990 levels. SB97 a "companion" bill directed amendments to the California Environmental Quality Act (CEQA) statute to specifically establish that GHG emissions and their impacts are appropriate subjects for CEQA analysis. Should impacts be determined, the intent of this study would be to recommend suitable design measures to bring the project to a level considered less than significant.

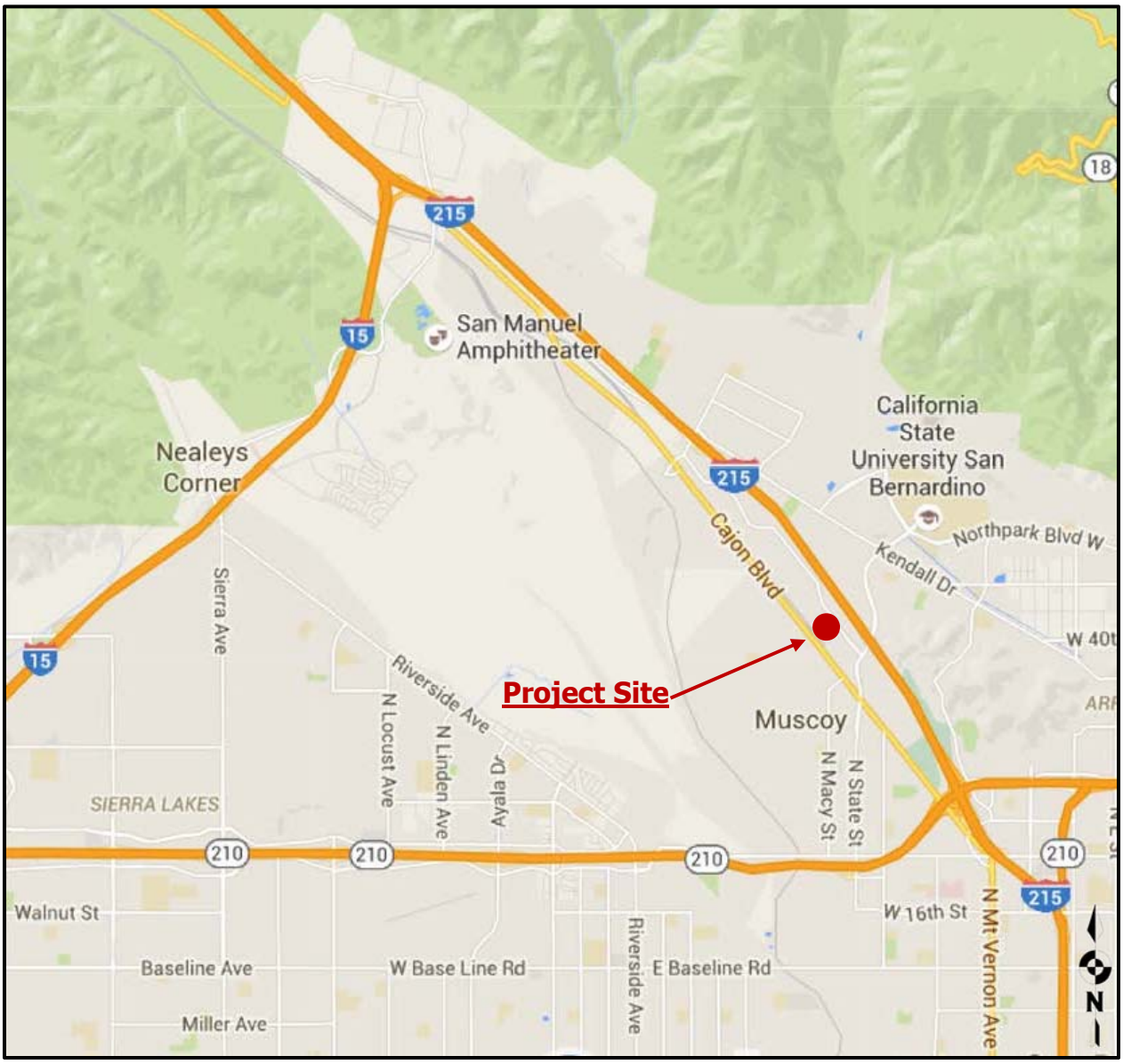
1.2 Project Location

The proposed Project site is located between Georgia Boulevard and Cajon Boulevard in the South Coast Air Basin (SCAB) within the City of San Bernardino. The nearest cross street to the project site is Saratoga Way and Georgia Boulevard. Access to the site is taken from driveways off of Georgia Boulevard. A general project vicinity map is shown in Figure 1–A on the following page.

1.3 Project Description

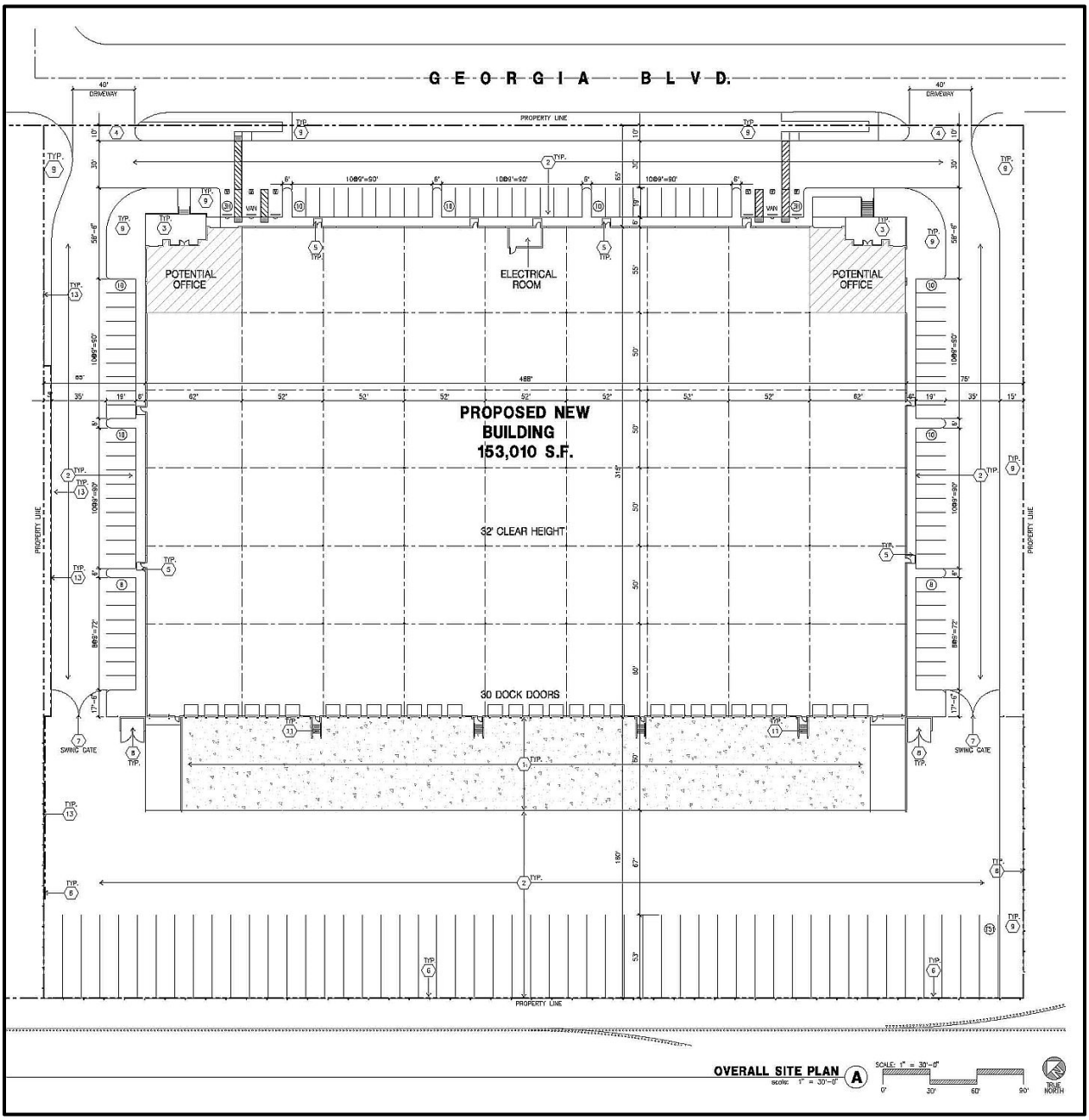
The project will construct a 153,010 square foot (SF) building for warehouse/distribution of which approximately 5,000 SF would be used for office space. The entire distribution warehouse facility will be located on an 8.1-acre site zoned light industrial. Grading is expected to start in January 2017 and full Build out could be as soon as late December of 2017. A site development plan is shown in Figure 1-B on Page 3 of this report.

Figure 1-A: Project Vicinity Map



Source: (Google, 2016)

Figure 1-B: Project Site Plan



Source: (Empire Design Group, Inc., 2015)

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Understanding Greenhouse Gasses

Greenhouse gases such as water vapor and carbon dioxide are abundant in the earth's atmosphere. These gases are called "Greenhouse Gases" because they absorb and emit thermal infrared radiation which acts like an insulator to the planet. Without these gases, the earth ambient temperature would either be extremely hot during the day or blistering cold at night. However, because these gases can both absorb and emit heat, the earth's temperature does not sway too far in either direction.

Over the years as human activities require the use of burning fossil fuels stored carbon is released into the air in the form of CO_2 and to a much lesser extent CO. Additionally, over the years scientist have measured this rise in Carbon Dioxide and fear that it may be heating the planet too. Additionally, other greenhouse gases such as Methane, Nitrous Oxide and Water Vapor contribute to the warming phenomena.

Greenhouse Gasses of concern as analyzed in this study are Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O). To simply greenhouse gas calculations, both CH_4 and N_2O can be converted to an equivalent amount of CO_2 or CO_2e. CO_2e is calculated by multiplying the calculated levels of CH_4 and N_2O by a Global Warming Potential (GWP). The U.S. Environmental Protection Agency publishes GWPs for various GHGs and reports that the GWP for CH4 and N2O is 21 and 310, respectively. It should be noted however, per IPCC 4th Assessment Report, US EPA changed the global warming potential for methane from 21 to 25 and for nitrous oxide from 310 to 298 however since all projections from AB 32 and related analysis are based on the older numbers, using similar techniques would yield appropriate numbers normalized to compare to state projections. Once new state calculations and inventories are revised, it would be appropriate to utilize the new numbers.

2.2 Existing Setting

The existing project site area is generally represented by flat topography with elevations ranging from 1475 feet to 1485 feet above mean sea level. Land uses surrounding the project site is generally light industrial/warehouse uses. Also, Interstate-215 and adjacent land uses are similar to the proposed project.

3.0 CLIMATE CHANGE REGULATORY ENVIRONMENT

3.1 Regulatory Standards (Assembly Bill 32)

The Global Warming Solutions Act of 2006 (AB 32), requires that by 2020 the state's greenhouse gas emissions be reduced to 1990 levels or roughly a 28.3% reduction. In 2050, GHG emissions need to be reduced by 80% of 1990 levels. Significance thresholds have not been adopted but are currently being discussed. AB 32 is specific as to when thresholds shall be defined. The pertinent Sections are referenced within Part 4 of AB 32 Titled *Greenhouse Gas Emissions Reductions* are shown below:

Section 38560.5 (b) states:

On or before January 1, 2010, the state board shall adopt regulations to implement the measures identified on the list published pursuant to subdivision (a).

Section 38562 states:

(A) On or before January 1, 2011, the state board shall adopt greenhouse gas emission limits and emission reduction measures by regulation to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions in furtherance of achieving the statewide greenhouse gas emissions limit, to become operative beginning on January 1, 2012.

(B) In adopting regulations pursuant to this Section and Part 5 (commencing with Section (38570), to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the state board shall do all of the following:

1. *Design the regulations, including distribution of emissions allowances where appropriate, in a manner that is equitable, seeks to minimize costs and maximize the total benefits to California, and encourages early action to reduce greenhouse gas emissions.*
2. *Ensure that activities undertaken to comply with the regulations do not disproportionately impact low-income communities.*
3. *Ensure that entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of this Section receive appropriate credit for early voluntary reductions.*
4. *Ensure that activities undertaken pursuant to the regulations complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminant emissions.*
5. *Consider cost-effectiveness of these regulations.*
6. *Consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources, and other benefits to the economy, environment, and public health.*
7. *Minimize the administrative burden of implementing and complying with these regulations.*
8. *Minimize leakage.*

9. Consider the significance of the contribution of each source or category of sources to statewide emissions of greenhouse gases.

(C) In furtherance of achieving the statewide greenhouse gas emissions limit, by January 1, 2011, the state board may adopt a regulation that establishes a system of market-based declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions, applicable from January 1, 2012, to December 31, 2020, inclusive, that the state board determines will achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions, in the aggregate, from those sources or categories of sources.

(D) Any regulation adopted by the state board pursuant to this part or Part 5 (commencing with Section 38570) shall ensure all of the following:

1. The greenhouse gas emission reductions achieved are real, permanent, quantifiable, verifiable, and enforceable by the state board.
2. For regulations pursuant to Part 5 (commencing with Section 38570), the reduction is in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that otherwise would occur.
3. If applicable, the greenhouse gas emission reduction occurs over the same time period and is equivalent in amount to any direct emission reduction required pursuant to this division.

3.2 Regulatory Standards (Assembly Bill 341)

This bill makes a legislative declaration that it is the policy goal of the state that not less than 75% of solid waste generated be source reduced, recycled, or composted by the year 2020, and would require the California Department of Resources Recycling and Recovery (CalRecycle), by January 1, 2014, to provide a report to the Legislature that provides strategies to achieve that policy goal and also includes other specified information and recommendations.

This bill will increase diversion requirements by an additional 25% over Business as Usual as was defined under AB 939 and SB 1322 which were signed into law as the Integrated Waste Management Act of 1989, which as of the year 2000 only required 50 percent diversion.

3.3 Regulatory Standards (Senate Bill 97)

SB 97 requires the Office of Planning and Research (OPR) to prepare and transmit to the Resources Agency, guidelines and directed amendments to the CEQA statute specifically for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions.

3.4 AB 1493 (Pavley Standards)

AB 1493 regulations are similar to CAFE Standards however are expected to produce a Greenhouse Gas Benefit greater to that of the CAFE Standard and would be expected to double the amount of GHGs saved under CAFE. The Pavley rules or also referred to as California Standards are designed to regulate GHG emissions while the federal standards are aimed at reducing the nation's fuel consumption.

Under Pavley starting with vehicles produced in 2009, manufactures have the flexibility in meeting California standards through a combination of reducing tailpipe emissions of Carbon Dioxide, Nitrous Oxide, Methane and hydrofluorocarbons from vehicle air conditions systems. Furthermore, the California standards are estimated to increase fuel efficiency to 35.7 miles per gallon by (California Air Resourrce Board, 2013).

3.5 Advanced Clean Car Program

Pavley II along with other low-Emission Vehicle (LEV) regulations including new approaches to increase zero emission vehicles and hybrids have since been combined into a single effort program termed Advanced Clean Cars (California Air Resource Board, 2014). The new effort uses a number of emission control programs to control smog, soot and global warming and would be in effect from 2017 to 2025. This program is estimated to reduce GHGs by 4.0 Million or roughly 2.4% beyond that of Pavley I (California Air Resource Board, 2011).

3.6 Vehicle Efficiency Measures

Additional vehicle efficiency measures within the Scoping Plan include Low Friction Oil, Tire Pressure Regulation, Tire Tread Program, and Solar Reflective Automotive Paint and specialized window glazing and according to the scooping plan will reduce GHGs by 4.5 MMTCO2e in 2020. To date however, some of the reduction measures under Vehicle Efficacy are still under review with the exception of the Tire Pressure Regulations which estimate to remove 0.6 MMTCO2e by 2020.

3.7 Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (P.L. 110-140, H.R. 6) is an energy policy law adopted by congress which consists mainly of provisions designed to increase energy efficiency and the availability of renewable energy. The law will require automakers to boost fleet wide gas mileage averages from the current 25 miles per gallon (mpg) to 35 mpg by 2020. The rule was updated in 2010 which required fleet-wide fuel economy standard to be set at 34.1 mpg by 2016 and affect cars built in 2012 through 2016. Also, in

October 2012, the rules were further changed to 54.5 mpg for cars and light-duty trucks by Model Year 2025. This fleet wide average is known as the Corporate Average Fuel Economy (CAFE) standard.

3.8 Executive Order S-3-05

Executive Order S-3-05 was signed by Governor Arnold Schwarzenegger in June 2005. That the following greenhouse gas emission reduction targets are hereby established for California: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels.

3.9 Executive Order S-01-07

Executive Order S-01-07 was signed by Governor Arnold Schwarzenegger in January 2007 and is effectively known as the Low Carbon Fuel Standard or LCFS. The executive order seeks to reduce the carbon intensity of California's passenger vehicle fuels by at least 10% by 2020. The LCFS will require fuel providers in California to ensure that the mix of fuel they sell into the California market meet, on average, a declining standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold.

3.10 Executive Order B-30-15

Executive Order B-30-15 established a statewide emissions reduction target of 40% below 1990 levels by 2030. This interim measure was identified by the Governor as one way to keep the State on a trajectory needed to meet the 2050 goal of reducing GHG emissions to 80% below 1990 levels by 2050 pursuant to Executive Order S-3-05. The 2030 and 2050 goals described in both these Executive Orders are an expression of executive policy and (and not adopted legislative or regulatory action). (Office of Governor Edmund G. Brown Jr., 2015).

3.11 Executive Order S-14-08

Executive Order S-14-08 was signed by Governor Arnold Schwarzenegger and is effectively known as the Renewable Portfolio Standard (RPS). According to S-14-08, the RPS will require that all retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020. State government agencies are hereby directed to take all appropriate actions to implement this target in all regulatory proceedings, including siting, permitting, and procurement for renewable energy power plants and transmission lines.

It should be noted that Governor Jerry Brown is committed to increasing this regulation such that the renewable portfolio in 2030 would be at least 50%. This commitment was entered into agreement with multiple international states signed on May 19, 2015 by California. (Subnational Global Climate Leadership Memorandum of Understanding, 2015). Though this is not law, for purposes of speculative GHG forecasting into 2030 and 2050, it's reasonable to assume that it will be a requirement. For purposes of the post-2020 analysis, the emission reduction benefits of achieving a 50 percent RPS by 2030 has been quantified as a 17 percent increase over RPS in 2020 and 30 percent over what has already been achieved.

3.12 Title 24 Standards

The California Energy Code, or Title 24, Part 6 of the California Code of Regulations, also titled The Energy Efficiency Standards for Residential and Nonresidential Buildings, were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods (California Energy Code, 2015)

The Energy Commission adopted the 2008 changes to the Building Energy Efficiency Standards for some of the following reasons and would reduce both Natural Gas and Electrical demand:

1. *To provide California with an adequate, reasonably-priced, and environmentally-sound supply of energy.*
2. *To respond to Assembly Bill 32, the Global Warming Solutions Act of 2006, which mandates that California must reduce its greenhouse gas emissions to 1990 levels by 2020.*
3. *To pursue California energy policy that energy efficiency is the resource of first choice for meeting California's energy needs.*
4. *To act on the findings of California's Integrated Energy Policy Report (IEPR) that Standards are the most cost effective means to achieve energy efficiency, expects the Building Energy Efficiency Standards to continue to be upgraded over time to reduce electricity and peak demand, and recognizes the role of the Standards in reducing energy related to meeting California's water needs and in reducing greenhouse gas emissions.*
5. *To meet the West Coast Governors' Global Warming Initiative commitment to include aggressive energy efficiency measures into updates of state building codes.*
6. *To meet the Executive Order in the Green Building Initiative to improve the energy efficiency of nonresidential buildings through aggressive standards.*

Title 24 2008 has been found reduce electrical emissions by 22.7% when comparing prototype buildings built to the minimum standards in 2005 and then comparing the prototypes within duplicate models built to standards in 2008. (Architectural Energy Corporation for California Energy Commission, November 7, 2007)

Title 24 2010 incorporated Cal Green standards and added a voluntary tiered approach which compared efficiency over Title 24 2008. (California Building Standards Commission, June 2010).

The latest standards are Title 24 2013 and are effective as of July 1, 2014. Looking at the entire construction outlook for low-rise single-family detached homes, electricity use is reduced by 36.4 percent and 23.3 percent for multi-family uses and natural gas consumption is reduced by 6.5 percent for single family developments and 3.8% for multi-family structures (Architectural Energy Corporation (AEC), 2013). Nonresidential Newly Constructed Buildings would have a reduction from the 2008 Standards of 21.8 percent for electricity and 16.8 percent for natural gas.

In addition, the CEC currently anticipates adopting the 2016 Title 24 standards in 2015, and assigning those standards with an effective date of January 1, 2017 Further, both the CEC and CPUC remain committed to their goal that all new residential construction in California achieves zero net energy standards by 2020 It is likely that a subsequent, more rigorous iteration of the Title 24 standards will apply to the project at the time of building permit issuance. The GHG emission and energy savings associated with those standards have not been quantified at this time because the savings are unknown.

3.13 California Environmental Quality Act (CEQA) Requirements

As directed by SB 97, the Natural Resources Agency adopted Amendments to Title 14 Division 6 Chapter 3 CEQA Guidelines for greenhouse gas emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The amendments became effective on March 18, 2010. The pertinent Sections are shown below:

Section 15064.4 - Determining the Significance of Impacts from Greenhouse Gas

(A) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

1. *Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or*
2. *Rely on a qualitative analysis or performance-based standards.*

(B) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

1. *The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;*
2. *Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.*
3. *The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.*

General Questions recommended within the environmental checklist are:

(a) Will the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

(b) Will the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

3.14 ARB Scoping Plan Measures

In response to AB 32, California Air Resource Board (ARB) developed the Climate Change Scoping Plan. In that plan, the Board developed GHG emission reduction strategies which expanded energy efficiency programs, increased utility renewable energy requirements, developed clean car and Low Carbon Fuel Standards (LCFS), developed the cap-and-trade program and identified adopted discretionary measures to assist the state in meeting the 2020 limits established by AB 32.

In May 2014, the ARB adopted the first update to the original scoping plan which was necessary to help establish long-term GHG policies to make deep GHG emission reductions to help achieve goals established in S-3-05. The update includes key recommendations for six key economic sectors (energy, transportation, agriculture, water, waste management,

and natural and working lands) as well as short-lived climate pollutants, green buildings, and the Cap-and-Trade Program. The findings largely affect regulatory measures that will indirectly reduce GHG emissions and generate a need to update local policies.

3.15 City of San Bernardino Thresholds of Significance

The City of San Bernardino has decided to participate in San Bernardino Associated Governments (SANBAG) San Bernardino County Regional GHG Reduction Plan. As part of that plan, 21 cities participated with the goal of determining GHG inventories, emission targets and reduction strategies all of which will serve as foundations for the development of individual City specific Climate Action Plans (CAP) (SANBAG, 2015). Based on that plan, the City has selected a 15% reduction strategy below its 2008 levels by 2020.

As part of SANBAGs GHG Reduction plan, no specific screening thresholds were identified. The City is within SCAQMD, and therefore, it is appropriate to utilize the latest SCAQMD guidance for GHG screening. Currently, SCAQMD industry standards within the district has followed Tier screening standards as the baseline for significance thresholds since September 2010. Under this methodology, screening values are established for industrial, residential and combined project types which are 10,000 MT/year CO2e for industrial projects, 3,500 MT/year CO2e for residential projects and 3,000 MT/year CO2e for mixed use projects. Based on this, the industrial project currently being analyzed within this analysis would be screened under the 10,000 MT/year CO2e industrial screening threshold. Should the project exceed these threshold, the project would be required to implement mitigation measures to reduce GHG impacts by 15% below the City's 2008 levels by 2020.

4.0 METHODOLOGY

4.1 Construction CO_2e Emissions Calculation Methodology

The Project construction dates were estimated based on an estimated construction kickoff starting in January 2017. Construction of the entire project would take approximately 12 months. Table 4.1 shows the expected timeframes for the construction processes as well as the expected number of pieces of equipment to complete the project.

Table 4.1: Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Finish	Quantity
Site Preparation	1/1/2017	1/7/2017	
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			3
Grading	1/8/2017	2/1/2017	
Excavators			1
Graders			1
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			3
Paving	2/2/2017	2/20/2017	
Pavers			2
Paving Equipment			2
Rollers			2
Building Construction	2/21/2017	12/31/2017	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Architectural Coating	6/1/2017	12/31/2017	
Air Compressors			1
This equipment list is based upon equipment inventory within CALLEEMOD 2013.2.2. The quantity and types are based upon discussions with the project applicant.			

GHG impacts related to construction will be calculated using the latest CalEEMod 2013.2.2 air quality model which was developed by ENVIRON International Corporation for South Coast Air Quality Management District (SCAQMD). Additionally, CO_2e emissions generated from blasting will be added to the CalEEMod output. CalEEMod incorporates emission factors from the EMFAC2011 model for on-road vehicle emissions and the OFFROAD2011 model for off-road vehicle emissions. Because CO_2 emissions from construction only occur at the beginning of a project, emissions will be averaged over a 30-year period. This recommendation was based on proposals from South Coast Air Quality Management District in 2008.

4.2 Operational Emissions Calculation Methodology

Once construction is completed the proposed project would generate air quality and GHG emissions from daily operations which would include sources such as Area, Energy, Mobile, Solid waste and Water uses, which are calculated within CalEEMod. Area Sources include usage of fireplaces, consumer products, landscaping and architectural coatings as part of regular maintenance. For this project however, very few emissions are expected from consumer sources since nobody will be living onsite.

Energy sources would be from uses such as electricity and natural gas. Solid waste generated in the form of trash is also considered as decomposition of organic material breaks down to form GHGs. GHGs from water are also indirectly generated through the conveyance of the resource via pumping throughout the state and as necessary for wastewater treatment. Finally the project would also generate air quality emissions and GHG through the use of carbon fuel burning vehicles for transportation. The project was sourced out as an unrefrigerated warehouse. Also, the CalEEMod input file was adjusted using an 80.3% passenger vehicle, 19.7% heavy truck scenario which is consistent with the project traffic study (Kimley Horn, 2016). The annual CalEEMod inputs are shown in ***Attachments A*** at the end of this report.

5.0 FINDINGS

5.1 Project Related Construction Emissions

Utilizing the CalEEMod inputs for the model as shown in Table 4.1 above, we find that construction of the project will produce 464.38 Metric Tons of CO_2e over the construction life of the project. Given the fact that the total emissions will ultimately contribute to yearly emission levels, it is acceptable to average the total construction emission over a 30 year period, which would be 15.48 MT per year. A summary of the construction emissions is shown in Table 5.1 below.

Table 5.1: Expected Annual Construction CO_2e Emissions Summary MT/Year

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
2017	464.38	464.38	464.38	464.38	464.38	464.38
Total						**464.38**
Yearly Average Construction Emissions (Metric Tons/year over 30 years)						**15.48**
Expected Construction emissions are based upon CalEEMod modeling assumptions for equipment and durations listed in Table 4.1 above.						

5.2 Project Related Operational Emissions/Conclusions

As previously discussed, emissions generated from Area, Energy, Mobile, Solid Waste and Water uses is also calculated within CalEEMod. The program is largely based on default settings which are automatically populated throughout the model based on the imputed land use. Statewide averages for utility emissions were utilized for the calculations throughout the model. The calculated operational emissions are identified in Table 5.2 on the following Page.

Based upon the findings within this report, the proposed project would generate approximately 1,578.3 Metric Tons (MT) of CO2e each year which is less than the lowest screening thresholds established by South Coast Air Quality Management District (SCAQMD) tiered approach of 3,000 MT for mixed use projects and 10,000 MT for industrial projects. Since the project wouldn't exceed these thresholds, the project would not be expected to implement mitigation measures to reduce GHG emissions by 15% as proposed by the City of San Bernardino to the San Bernardino Associated Government (SANBAG) San Bernardino County Regional GHG Reduction Plan. Given this, there would be neither direct nor indirect impacts under CEQA. Therefore, the project would not require further analysis or mitigation.

Table 5.2: Expected Operational Emissions Summary MT/Year

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Area	0.000	0.004	0.004	0.000	0.000	0.004
Energy	0.000	149.708	149.708	0.006	0.002	150.332
Mobile	0.000	1,173.625	1,173.625	0.033	0.000	1,174.319
Waste	28.772	0.000	28.772	1.700	0.000	64.480
Water	11.063	129.933	140.995	1.142	0.028	173.682
Amortized Construction Emissions (Table 5.1 above)						15.48
Total Construction and Operations						**1,578.30**

Expected Construction emissions are based upon CalEEMod modeling assumptions for equipment and durations listed in Table 1 above.
Data is presented in decimal format and may have rounding errors.

6.0 REFERENCES

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ATTACHMENT A

CalEEMod 2013.2.2

153K Distribution Center

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	153.00	1000sqft	8.10	153,010.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site is 8.1 Acres

Construction Phase - PS

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - cl

Grading - 8.1AC

Architectural Coating -

Vehicle Trips - 3.56 drips per ksf per traffic study

Vechicle Emission Factors - adjusted to match Project trip types identified in traffic study 80.3% PV, 19.87% trucks

Vechicle Emission Factors - adjusted to match Project trip types identified in traffic study 80.3% PV, 19.87% trucks

Vechicle Emission Factors - adjusted to match Project trip types identified in traffic study 80.3% PV, 19.87% trucks

Area Coating -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
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tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3

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tblConstEquipMitigation	DPF	No Change	Level 3
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	152.00
tblConstructionPhase	NumDays	230.00	224.00

tblConstructionPhase	NumDays	20.00	18.00
tblConstructionPhase	NumDays	20.00	13.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	PhaseEndDate	7/31/2018	12/31/2017
tblConstructionPhase	PhaseEndDate	12/29/2017	12/31/2017
tblConstructionPhase	PhaseEndDate	1/6/2017	1/7/2017
tblConstructionPhase	PhaseStartDate	1/1/2018	6/1/2017
tblGrading	AcresOfGrading	9.00	8.10
tblGrading	AcresOfGrading	0.00	8.10
tblLandUse	LandUseSquareFeet	153,000.00	153,010.00
tblLandUse	LotAcreage	3.51	8.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblSolidWaste	SolidWasteGenerationRate	143.82	141.74
tblTripsAndVMT	WorkerTripNumber	64.00	63.00
tblVehicleEF	HHD	0.04	0.10
tblVehicleEF	HHD	0.04	0.10
tblVehicleEF	HHD	0.04	0.10
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDA	0.47	0.47
tblVehicleEF	LDT1	0.07	0.06
tblVehicleEF	LDT1	0.07	0.06
tblVehicleEF	LDT1	0.07	0.06
tblVehicleEF	LDT2	0.17	0.14
tblVehicleEF	LDT2	0.17	0.14
tblVehicleEF	LDT2	0.17	0.14

tblVehicleEF	LHD1	0.06	0.03
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tblVehicleEF	LHD2	9.0500e-003	0.03
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tblVehicleEF	LHD2	9.0500e-003	0.03
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tblVehicleEF	MCY	4.9650e-003	1.0000e-003
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tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.16	0.13
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tblVehicleEF	MH	2.9440e-003	1.0000e-003
tblVehicleEF	MH	2.9440e-003	1.0000e-003
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	OBUS	1.1190e-003	1.0000e-003
tblVehicleEF	OBUS	1.1190e-003	1.0000e-003
tblVehicleEF	OBUS	1.1190e-003	1.0000e-003
tblVehicleEF	SBUS	7.0000e-004	1.0000e-003
tblVehicleEF	SBUS	7.0000e-004	1.0000e-003
tblVehicleEF	SBUS	7.0000e-004	1.0000e-003
tblVehicleEF	UBUS	1.3370e-003	1.0000e-003
tblVehicleEF	UBUS	1.3370e-003	1.0000e-003
tblVehicleEF	UBUS	1.3370e-003	1.0000e-003
tblVehicleTrips	ST_TR	2.59	3.56

tblVehicleTrips	SU_TR	2.59	3.56
tblVehicleTrips	WD_TR	2.59	3.56
tblWater	IndoorWaterUseRate	35,381,250.00	34,870,187.50

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	2.2460	3.9109	3.3057	5.3700e-003	0.1862	0.2460	0.4321	0.0681	0.2312	0.2993	0.0000	462.5805	462.5805	0.0855	0.0000	464.3758
Total	**2.2460**	**3.9109**	**3.3057**	**5.3700e-003**	**0.1862**	**0.2460**	**0.4321**	**0.0681**	**0.2312**	**0.2993**	**0.0000**	**462.5805**	**462.5805**	**0.0855**	**0.0000**	**464.3758**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	1.8688	0.5595	3.1700	5.3700e-003	0.1862	5.1300e-003	0.1913	0.0681	4.7900e-003	0.0729	0.0000	462.5801	462.5801	0.0855	0.0000	464.3754
Total	**1.8688**	**0.5595**	**3.1700**	**5.3700e-003**	**0.1862**	**5.1300e-003**	**0.1913**	**0.0681**	**4.7900e-003**	**0.0729**	**0.0000**	**462.5801**	**462.5801**	**0.0855**	**0.0000**	**464.3754**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**16.79**	**85.69**	**4.11**	**0.00**	**0.00**	**97.91**	**55.73**	**0.00**	**97.93**	**75.64**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7304	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8000e-003	3.8000e-003	1.0000e-005	0.0000	4.0200e-003
Energy	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	149.7084	149.7084	6.4100e-003	1.5800e-003	150.3323
Mobile	0.3846	2.4490	5.2882	0.0150	0.8981	0.0374	0.9355	0.2417	0.0344	0.2761	0.0000	1,173.6250	1,173.6250	0.0331	0.0000	1,174.3190
Waste						0.0000	0.0000		0.0000	0.0000	28.7719	0.0000	28.7719	1.7004	0.0000	64.4798
Water						0.0000	0.0000		0.0000	0.0000	11.0627	129.9326	140.9953	1.1422	0.0281	173.6820
Total	**1.1168**	**2.4651**	**5.3036**	**0.0151**	**0.8981**	**0.0386**	**0.9367**	**0.2417**	**0.0356**	**0.2773**	**39.8346**	**1,453.2698**	**1,493.1044**	**2.8821**	**0.0296**	**1,562.8170**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7304	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8000e-003	3.8000e-003	1.0000e-005	0.0000	4.0200e-003
Energy	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	149.7084	149.7084	6.4100e-003	1.5800e-003	150.3323
Mobile	0.3846	2.4490	5.2882	0.0150	0.8981	0.0374	0.9355	0.2417	0.0344	0.2761	0.0000	1,173.6250	1,173.6250	0.0331	0.0000	1,174.3190
Waste						0.0000	0.0000		0.0000	0.0000	28.7719	0.0000	28.7719	1.7004	0.0000	64.4798
Water						0.0000	0.0000		0.0000	0.0000	11.0627	129.9326	140.9953	1.1420	0.0280	173.6643
Total	**1.1168**	**2.4651**	**5.3036**	**0.0151**	**0.8981**	**0.0386**	**0.9367**	**0.2417**	**0.0356**	**0.2773**	**39.8346**	**1,453.2698**	**1,493.1044**	**2.8819**	**0.0296**	**1,562.7994**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.13**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2017	1/7/2017	5	5	
2	Grading	Grading	1/8/2017	2/1/2017	5	18	
3	Paving	Paving	2/2/2017	2/20/2017	5	13	
4	Building Construction	Building Construction	2/21/2017	12/31/2017	5	224	
5	Architectural Coating	Architectural Coating	6/1/2017	12/31/2017	5	152	

Acres of Grading (Site Preparation Phase): 8.1

Acres of Grading (Grading Phase): 8.1

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 229,515; Non-Residential Outdoor: 76,505 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	63.00	25.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0194	0.0000	0.0194	8.7400e-003	0.0000	8.7400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.3500e-003	0.0558	0.0428	5.0000e-005		3.2500e-003	3.2500e-003		2.9900e-003	2.9900e-003	0.0000	4.2293	4.2293	1.3000e-003	0.0000	4.2565
Total	**5.3500e-003**	**0.0558**	**0.0428**	**5.0000e-005**	**0.0194**	**3.2500e-003**	**0.0226**	**8.7400e-003**	**2.9900e-003**	**0.0117**	**0.0000**	**4.2293**	**4.2293**	**1.3000e-003**	**0.0000**	**4.2565**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.3000e-004	1.3700e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2353	0.2353	1.0000e-005	0.0000	0.2356
Total	**9.0000e-005**	**1.3000e-004**	**1.3700e-003**	**0.0000**	**2.7000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2353**	**0.2353**	**1.0000e-005**	**0.0000**	**0.2356**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0194	0.0000	0.0194	8.7400e-003	0.0000	8.7400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	2.4000e-003	0.0275	5.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.2293	4.2293	1.3000e-003	0.0000	4.2565
Total	**5.5000e-004**	**2.4000e-003**	**0.0275**	**5.0000e-005**	**0.0194**	**1.0000e-005**	**0.0194**	**8.7400e-003**	**1.0000e-005**	**8.7500e-003**	**0.0000**	**4.2293**	**4.2293**	**1.3000e-003**	**0.0000**	**4.2565**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.3000e-004	1.3700e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2353	0.2353	1.0000e-005	0.0000	0.2356
Total	**9.0000e-005**	**1.3000e-004**	**1.3700e-003**	**0.0000**	**2.7000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2353**	**0.2353**	**1.0000e-005**	**0.0000**	**0.2356**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0585	0.0000	0.0585	0.0303	0.0000	0.0303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0311	0.3238	0.2284	2.7000e-004		0.0184	0.0184		0.0169	0.0169	0.0000	24.8505	24.8505	7.6100e-003	0.0000	25.0104
Total	**0.0311**	**0.3238**	**0.2284**	**2.7000e-004**	**0.0585**	**0.0184**	**0.0768**	**0.0303**	**0.0169**	**0.0471**	**0.0000**	**24.8505**	**24.8505**	**7.6100e-003**	**0.0000**	**25.0104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	7.0000e-004	7.3900e-003	2.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.2708	1.2708	7.0000e-005	0.0000	1.2722
Total	**4.6000e-004**	**7.0000e-004**	**7.3900e-003**	**2.0000e-005**	**1.4800e-003**	**1.0000e-005**	**1.4900e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.2708**	**1.2708**	**7.0000e-005**	**0.0000**	**1.2722**

3.3 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0585	0.0000	0.0585	0.0303	0.0000	0.0303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2600e-003	0.0141	0.1769	2.7000e-004		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	24.8505	24.8505	7.6100e-003	0.0000	25.0104
Total	**3.2600e-003**	**0.0141**	**0.1769**	**2.7000e-004**	**0.0585**	**7.0000e-005**	**0.0586**	**0.0303**	**7.0000e-005**	**0.0303**	**0.0000**	**24.8505**	**24.8505**	**7.6100e-003**	**0.0000**	**25.0104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	7.0000e-004	7.3900e-003	2.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.2708	1.2708	7.0000e-005	0.0000	1.2722
Total	**4.6000e-004**	**7.0000e-004**	**7.3900e-003**	**2.0000e-005**	**1.4800e-003**	**1.0000e-005**	**1.4900e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.2708**	**1.2708**	**7.0000e-005**	**0.0000**	**1.2722**

3.4 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0124	0.1319	0.0957	1.4000e-004		7.4000e-003	7.4000e-003		6.8100e-003	6.8100e-003	0.0000	13.4507	13.4507	4.1200e-003	0.0000	13.5373
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0124**	**0.1319**	**0.0957**	**1.4000e-004**		**7.4000e-003**	**7.4000e-003**		**6.8100e-003**	**6.8100e-003**	**0.0000**	**13.4507**	**13.4507**	**4.1200e-003**	**0.0000**	**13.5373**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	5.1000e-004	5.3400e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9178	0.9178	5.0000e-005	0.0000	0.9188
Total	**3.3000e-004**	**5.1000e-004**	**5.3400e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9178**	**0.9178**	**5.0000e-005**	**0.0000**	**0.9188**

3.4 Paving - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7800e-003	7.7300e-003	0.1100	1.4000e-004		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	13.4507	13.4507	4.1200e-003	0.0000	13.5373
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.7800e-003**	**7.7300e-003**	**0.1100**	**1.4000e-004**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**13.4507**	**13.4507**	**4.1200e-003**	**0.0000**	**13.5373**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	5.1000e-004	5.3400e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9178	0.9178	5.0000e-005	0.0000	0.9188
Total	**3.3000e-004**	**5.1000e-004**	**5.3400e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9178**	**0.9178**	**5.0000e-005**	**0.0000**	**0.9188**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3475	2.9574	2.0305	3.0000e-003		0.1995	0.1995		0.1874	0.1874	0.0000	268.2166	268.2166	0.0660	0.0000	269.6029
Total	**0.3475**	**2.9574**	**2.0305**	**3.0000e-003**		**0.1995**	**0.1995**		**0.1874**	**0.1874**	**0.0000**	**268.2166**	**268.2166**	**0.0660**	**0.0000**	**269.6029**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0232	0.2326	0.3120	6.1000e-004	0.0173	3.6300e-003	0.0209	4.9500e-003	3.3300e-003	8.2900e-003	0.0000	54.2813	54.2813	3.9000e-004	0.0000	54.2895
Worker	0.0240	0.0367	0.3861	9.2000e-004	0.0774	5.6000e-004	0.0779	0.0206	5.2000e-004	0.0211	0.0000	66.4226	66.4226	3.4000e-003	0.0000	66.4941
Total	**0.0472**	**0.2693**	**0.6981**	**1.5300e-003**	**0.0947**	**4.1900e-003**	**0.0989**	**0.0255**	**3.8500e-003**	**0.0294**	**0.0000**	**120.7040**	**120.7040**	**3.7900e-003**	**0.0000**	**120.7836**

3.5 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0366	0.2496	1.9500	3.0000e-003		6.8000e-004	6.8000e-004		6.8000e-004	6.8000e-004	0.0000	268.2163	268.2163	0.0660	0.0000	269.6026
Total	**0.0366**	**0.2496**	**1.9500**	**3.0000e-003**		**6.8000e-004**	**6.8000e-004**		**6.8000e-004**	**6.8000e-004**	**0.0000**	**268.2163**	**268.2163**	**0.0660**	**0.0000**	**269.6026**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0232	0.2326	0.3120	6.1000e-004	0.0173	3.6300e-003	0.0209	4.9500e-003	3.3300e-003	8.2900e-003	0.0000	54.2813	54.2813	3.9000e-004	0.0000	54.2895
Worker	0.0240	0.0367	0.3861	9.2000e-004	0.0774	5.6000e-004	0.0779	0.0206	5.2000e-004	0.0211	0.0000	66.4226	66.4226	3.4000e-003	0.0000	66.4941
Total	**0.0472**	**0.2693**	**0.6981**	**1.5300e-003**	**0.0947**	**4.1900e-003**	**0.0989**	**0.0255**	**3.8500e-003**	**0.0294**	**0.0000**	**120.7040**	**120.7040**	**3.7900e-003**	**0.0000**	**120.7836**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7730					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.1661	0.1420	2.3000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	19.4047	19.4047	2.0500e-003	0.0000	19.4478
Total	**1.7983**	**0.1661**	**0.1420**	**2.3000e-004**		**0.0132**	**0.0132**		**0.0132**	**0.0132**	**0.0000**	**19.4047**	**19.4047**	**2.0500e-003**	**0.0000**	**19.4478**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3600e-003	5.1400e-003	0.0541	1.3000e-004	0.0108	8.0000e-005	0.0109	2.8800e-003	7.0000e-005	2.9500e-003	0.0000	9.3007	9.3007	4.8000e-004	0.0000	9.3107
Total	**3.3600e-003**	**5.1400e-003**	**0.0541**	**1.3000e-004**	**0.0108**	**8.0000e-005**	**0.0109**	**2.8800e-003**	**7.0000e-005**	**2.9500e-003**	**0.0000**	**9.3007**	**9.3007**	**4.8000e-004**	**0.0000**	**9.3107**

3.6 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7730					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2600e-003	9.7900e-003	0.1393	2.3000e-004		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	19.4047	19.4047	2.0500e-003	0.0000	19.4477
Total	**1.7753**	**9.7900e-003**	**0.1393**	**2.3000e-004**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**19.4047**	**19.4047**	**2.0500e-003**	**0.0000**	**19.4477**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3600e-003	5.1400e-003	0.0541	1.3000e-004	0.0108	8.0000e-005	0.0109	2.8800e-003	7.0000e-005	2.9500e-003	0.0000	9.3007	9.3007	4.8000e-004	0.0000	9.3107
Total	**3.3600e-003**	**5.1400e-003**	**0.0541**	**1.3000e-004**	**0.0108**	**8.0000e-005**	**0.0109**	**2.8800e-003**	**7.0000e-005**	**2.9500e-003**	**0.0000**	**9.3007**	**9.3007**	**4.8000e-004**	**0.0000**	**9.3107**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3846	2.4490	5.2882	0.0150	0.8981	0.0374	0.9355	0.2417	0.0344	0.2761	0.0000	1,173.6250	1,173.6250	0.0331	0.0000	1,174.3190
Unmitigated	0.3846	2.4490	5.2882	0.0150	0.8981	0.0374	0.9355	0.2417	0.0344	0.2761	0.0000	1,173.6250	1,173.6250	0.0331	0.0000	1,174.3190

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	544.68	544.68	544.68	2,334,344	2,334,344
Total	544.68	544.68	544.68	2,334,344	2,334,344

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.470000	0.060000	0.140000	0.130000	0.025000	0.025000	0.045000	0.100000	0.001000	0.001000	0.001000	0.001000	0.001000

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	132.2349	132.2349	6.0800e-003	1.2600e-003	132.7524
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	132.2349	132.2349	6.0800e-003	1.2600e-003	132.7524
NaturalGas Mitigated	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	17.4735	17.4735	3.3000e-004	3.2000e-004	17.5799
NaturalGas Unmitigated	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	17.4735	17.4735	3.3000e-004	3.2000e-004	17.5799

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	327441	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	17.4735	17.4735	3.3000e-004	3.2000e-004	17.5799
Total		**1.7700e-003**	**0.0161**	**0.0135**	**1.0000e-004**		**1.2200e-003**	**1.2200e-003**		**1.2200e-003**	**1.2200e-003**	**0.0000**	**17.4735**	**17.4735**	**3.3000e-004**	**3.2000e-004**	**17.5799**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	327441	1.7700e-003	0.0161	0.0135	1.0000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	17.4735	17.4735	3.3000e-004	3.2000e-004	17.5799
Total		**1.7700e-003**	**0.0161**	**0.0135**	**1.0000e-004**		**1.2200e-003**	**1.2200e-003**		**1.2200e-003**	**1.2200e-003**	**0.0000**	**17.4735**	**17.4735**	**3.3000e-004**	**3.2000e-004**	**17.5799**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	462090	132.2349	6.0800e-003	1.2600e-003	132.7524
Total		**132.2349**	**6.0800e-003**	**1.2600e-003**	**132.7524**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	462090	132.2349	6.0800e-003	1.2600e-003	132.7524
Total		**132.2349**	**6.0800e-003**	**1.2600e-003**	**132.7524**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7304	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8000e-003	3.8000e-003	1.0000e-005	0.0000	4.0200e-003
Unmitigated	0.7304	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8000e-003	3.8000e-003	1.0000e-005	0.0000	4.0200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1773					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5529					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.9000e-004	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8000e-003	3.8000e-003	1.0000e-005	0.0000	4.0200e-003
Total	**0.7304**	**2.0000e-005**	**1.9800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.8000e-003**	**3.8000e-003**	**1.0000e-005**	**0.0000**	**4.0200e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1773					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5529					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.9000e-004	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8000e-003	3.8000e-003	1.0000e-005	0.0000	4.0200e-003
Total	**0.7304**	**2.0000e-005**	**1.9800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.8000e-003**	**3.8000e-003**	**1.0000e-005**	**0.0000**	**4.0200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	140.9953	1.1420	0.0280	173.6643
Unmitigated	140.9953	1.1422	0.0281	173.6820

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	34.8702 / 0	140.9953	1.1422	0.0281	173.6820
Total		**140.9953**	**1.1422**	**0.0281**	**173.6820**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	34.8702 / 0	140.9953	1.1420	0.0280	173.6643
Total		**140.9953**	**1.1420**	**0.0280**	**173.6643**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	28.7719	1.7004	0.0000	64.4798
Unmitigated	28.7719	1.7004	0.0000	64.4798

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	141.74	28.7719	1.7004	0.0000	64.4798
Total		**28.7719**	**1.7004**	**0.0000**	**64.4798**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	141.74	28.7719	1.7004	0.0000	64.4798
Total		**28.7719**	**1.7004**	**0.0000**	**64.4798**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

APPENDIX E

Traffic Impact Analysis

TRAFFIC IMPACT STUDY
FOR THE PROPOSED
IPT I-215 DISTRIBUTION CENTER II (GEORGIA) PROJECT
IN THE CITY OF SAN BERNARDINO

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July, 2016

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TRAFFIC IMPACT STUDY
FOR THE PROPOSED
IPT I-215 DISTRIBUTION CENTER II (GEORGIA)
IN THE CITY OF SAN BERNARDINO

EXECUTIVE SUMMARY

This traffic impact study has been prepared to evaluate the project-related traffic impacts associated with the proposed development of the IPT I-215 Distribution Center II (Georgia) located at the southwest corner of Georgia Boulevard and Saratoga Way in the City of San Bernardino, California. The project is anticipated to open in the year 2017.

Based on the City's guidelines, this traffic analysis will provide an evaluation of morning and evening peak hour operations for the following scenarios at nine study intersections:

- Existing Conditions
- Opening Year Base
- Opening Year Base Plus Other Projects
- Opening Year Base Plus Other Projects Plus Project Traffic
- Future Build-Out 2035 Cumulative Base
- Future Build-Out 2035 Cumulative Base Plus Project

Existing traffic volumes for study intersections were collected in March 2016. Existing volumes, along with existing lane geometrics and traffic control at each intersection and roadway, were used in conducting peak hour Level of Service (LOS) analyses. Under Existing Conditions, the following intersections currently operate at an unacceptable Level of Service:

- #2 – Palm Avenue at I-215 Southbound Ramps: AM – LOS F
- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS F, PM – LOS F

The Opening Year 2016 Base Scenario includes a 3% ambient growth rate over a one-year period, applied to Existing traffic volumes. Under the Opening Year 2017 Base conditions, the following intersections currently operate at an unacceptable Level of Service:

- #2 – Palm Avenue at I-215 Southbound Ramps: AM – LOS F
- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS F, PM – LOS F

Traffic from Other Projects was added to Opening Year Base traffic volumes to establish the conditions for the Opening Year Base Plus Other Projects Scenario. Under this scenario, the following intersections would continue to operate at an unacceptable Level of Service:

- #2 – Palm Avenue at I-215 Southbound Ramps: AM – LOS F
- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS F, PM – LOS F

The project is estimated to generate 545 daily trips, 46 morning peak hour trips, and 49 evening peak hour trips. After applying passenger car equivalent (PCE) factors, the development would generate a 722 daily trips, 61 morning peak hour trips, and 65 evening peak hour trips.

Project Traffic was added to Opening Year Base Plus Other Projects traffic volumes to establish the conditions for the Opening Year Base Plus Other Projects Plus Project Scenario. Under this scenario, the following intersections would continue to operate at an unacceptable Level of Service:

- #2 – Palm Avenue at I-215 Southbound Ramps: AM – LOS F
- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS F, PM – LOS F

The project would not result in a significant impact to any of the study intersections in the Opening Year Base Plus Other Project Plus Project scenario.

The San Bernardino Transportation Analysis Model (SBTAM) was used to develop volumes for the Future Build-Out 2035 Cumulative Base Scenario. Under this scenario, the following intersections would operate at an unacceptable Level of Service:

- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS E, PM – LOS F

Project traffic was added to Future Build-Out 2035 Cumulative Base traffic volumes to establish the conditions for the Future Build-Out 2035 Cumulative Base Plus Project Scenario. Under this scenario, the following intersections would continue to operate at an unacceptable Level of Service:

- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS E, PM – LOS F

The project would not result in a significant impact to any of the study intersections in the Future Build-Out 2035 Cumulative Base Plus Project scenario.

Based on the analysis of each scenario, the project would not result in a significant impact to any of the study intersections and study scenarios. Therefore, there are no mitigation measures required.

TRAFFIC IMPACT STUDY
FOR THE PROPOSED
IPT I-215 DISTRIBUTION CENTER II (GEORGIA)
IN THE CITY OF SAN BERNARDINO

INTRODUCTION

Purpose and Study Objectives

This Traffic Impact Study has been prepared to address the traffic-related impacts of the proposed IPT I-215 Distribution Center II (Georgia) project in the City of San Bernardino.

This traffic study has been conducted in accordance with the City of San Bernardino *Traffic Impact Study Guidelines* (June, 2015), and in accordance with the San Bernardino Association of Governments (SANBAG) Congestion Management Program (CMP) requirements.

This report includes a description of existing traffic conditions in the surrounding area, estimated project trip generation and distribution, future traffic growth, and an assessment of project-related impacts on the roadway system. Where necessary, circulation system improvements have been identified to mitigate significant project impacts at the study locations.

Project Overview

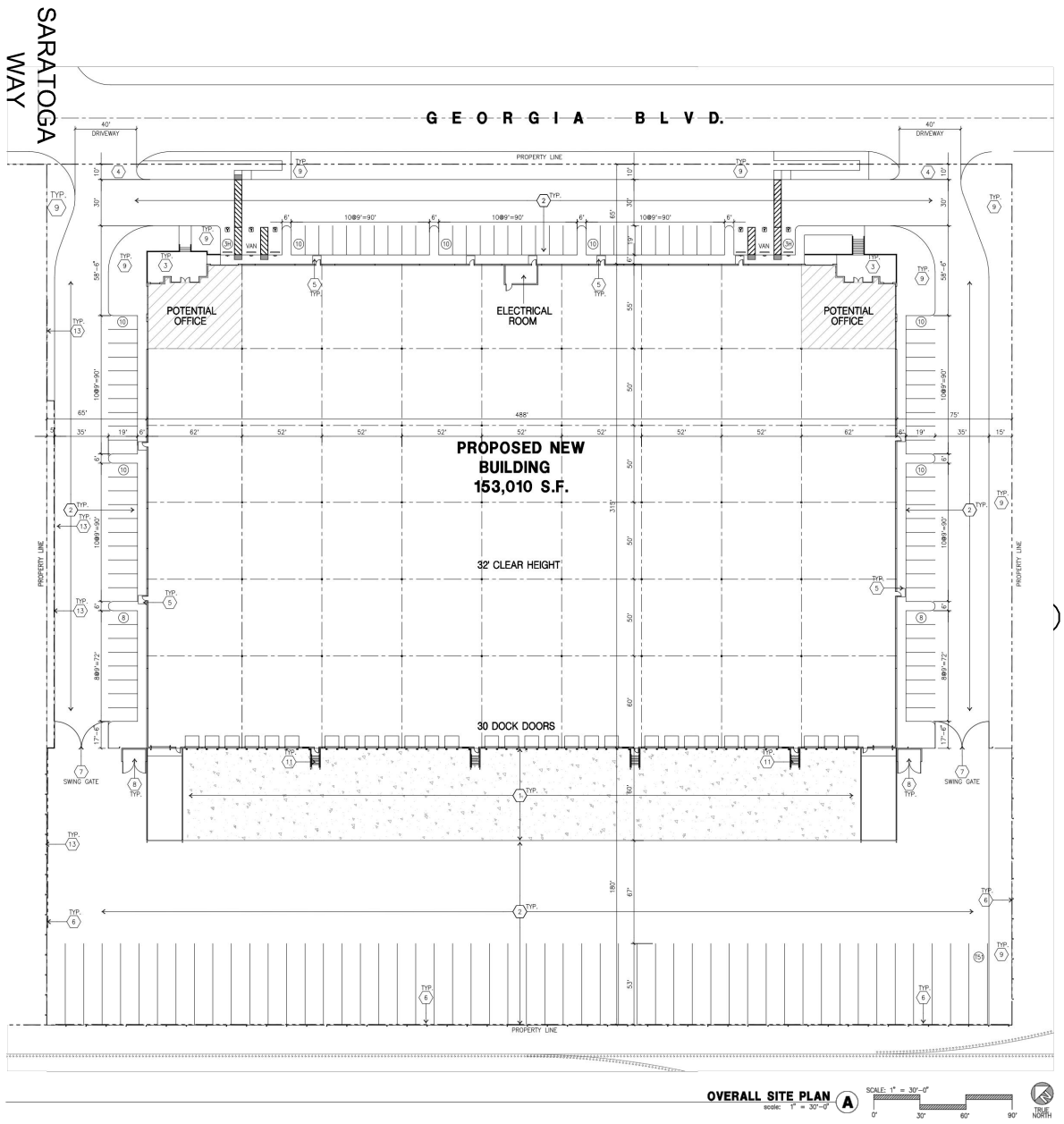
The project is located in the north-western area of the City of San Bernardino, and is shown in its regional setting on **Figure 1**. The project site (approximately 8.1 acres) is bounded by warehouse uses to the northwest, Georgia Boulevard to the northeast, warehouse uses to the southeast, and Cajon Boulevard to the southwest.

The project will involve the construction of a 153,010-square-foot building, with 148,010 square feet of warehouse use, 5,000 square feet of office use. A copy of the project site plan is provided on **Figure 2**.

Vehicular access provisions for the project site would consist of two full-movement driveways on Georgia Boulevard for both trucks and passenger vehicles. Passenger vehicles would enter the site via either of the driveways, depending on which is closest to their parking area destination. Trucks would enter and exit the site via either of the driveways, depending on dock availability on either end of the project site. Both entrances to the site would be unsignalized.

FIGURE 1
VICINITY MAP

Kimley»Horn



NOT TO SCALE

FIGURE 2
SITE PLAN

Kimley»Horn

ANALYSIS SCENARIOS AND METHODOLOGY

Analysis Scenarios

Based on the City *Traffic Impact Study Guidelines*, the project will be evaluated in the morning and evening peak hours for the following conditions:

- Existing Conditions
- Opening Year Base
- Opening Year Base Plus Other Projects
- Opening Year Base Plus Other Projects Plus Project Traffic
- Future Build-Out 2035 Cumulative Base
- Future Build-Out 2035 Cumulative Base Plus Project

Any mitigation measures for the future conditions will be identified, if necessary.

Intersection Analysis – HCM Methodology

Peak hour intersection operations at signalized and unsignalized intersections were evaluated using the methods prescribed in the Highway Capacity Manual (HCM) 2010, consistent with the requirements of the City of San Bernardino and the San Bernardino County CMP.

The City of San Bernardino guidelines require analysis of traffic operations to be based on the vehicular delay methodologies of the HCM (Transportation Research Board Special Report 209). The City does not designate a specific software to be used in the analysis, but allows the use of one of several software packages that are consistent with the HCM methodologies. The intersection analysis for the proposed project has been accomplished using the VISTRO software program and using the specified input parameters outlined in the San Bernardino County CMP.

Per the HCM Methodology, Level of Service (LOS) for signalized intersections is defined in terms of average vehicle delay, which provides an indication of driver discomfort, frustration, and fuel consumption. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The average control delay includes initial deceleration delay, queue move-up time, and final acceleration time in addition to the stop delay. The tables on the following page provide a description of the operating characteristics of each Level of Service and define the LOS in terms of average seconds of delay for signalized and unsignalized intersections.

LEVEL OF SERVICE DEFINITIONS	
Level of Service	**Description**
A	No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted but not objectionably so.
D	This level encompasses a zone of increasing restriction, approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, both speed and volume can drop to zero.

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED AND UNSIGNALIZED INTERSECTIONS		
Level of Service	**Signalized Intersection (Average delay per vehicle, in seconds)** [1]	**Unsignalized Intersections (Average delay per vehicle, in seconds)** [2]
A	≤ 10	0 – 10
B	> 10 – 20	> 10 – 15
C	> 20 – 35	> 15 – 25
D	> 35 – 55	> 25 – 35
E	> 55 – 80	> 35 – 50
F	> 80	> 50

[1] Source: Highway Capacity Manual (HCM 2010), Exhibit 18-4.

[2] Source: Highway Capacity Manual (HCM 2010), Exhibits 19-1 and 20-2.

Level of Service Standards and Measure of Significance

The City of San Bernardino General Plan Circulation Element establishes minimum Level of Service standards, which require that City intersections operate at LOS D or better during the morning and evening peak hours. The City's Traffic Study Guidelines require new development to mitigate impacts that cause the Level of Service to fall below LOS D, or the peak hour volume-to-capacity (v/c) ratio to increase as follows:

LOS (Without Project)	V/C Difference
C	> 0.0400
D	> 0.0200
E, F	> 0.0100

AREA CONDITIONS

Study Area and Intersections

This traffic study includes documentation of existing conditions, analysis of cumulative traffic conditions, and identification of project-related impacts at the following study intersections:

Study Intersections:

1. Palm Avenue at Hallmark Parkway
2. Palm Avenue at I-215 SB Ramps
3. Palm Avenue at I-215 NB Ramps
4. Palm Avenue at Kendall Drive/Little League Drive
5. Hallmark Parkway at Saratoga Way
6. University Parkway at Hallmark Parkway
7. University Parkway at I-215 SB Ramps
8. University Parkway at I-215 NB Ramps
9. University Parkway at Kendall Drive
10. Georgia Boulevard at North Driveway
11. Georgia Boulevard at South Driveway

The study locations were established in consultation with City staff through the Scoping Agreement process (Scope of Study Form of the City of San Bernardino *Traffic Impact Study Guidelines*). A copy of the approved Scoping Agreement is provided in ***Appendix A***.

Existing Street System

Regional access to the site is provided primarily by the Interstate 215 (I-215) Freeway, approximately one-half mile to the east of the project site. In addition, the SR-210 Freeway is located approximately 2 miles to the south of the site; the I-15 Freeway is approximately 5.5 miles to the north of the site, and access to the I-10 Freeway is approximately 7.5 miles to the south.

Existing lane configurations and intersection controls at the study intersections are shown on **Figure 3**. As shown on Figure 3, the streets adjacent to the project site are oriented on a diagonal. For purposes of this report, Palm Avenue and University Parkway are considered to be the north-south streets, and Kendall Avenue and the I-215 Freeway ramps are considered to be the east-west streets. The following provides a description of the roadways surrounding the project site.

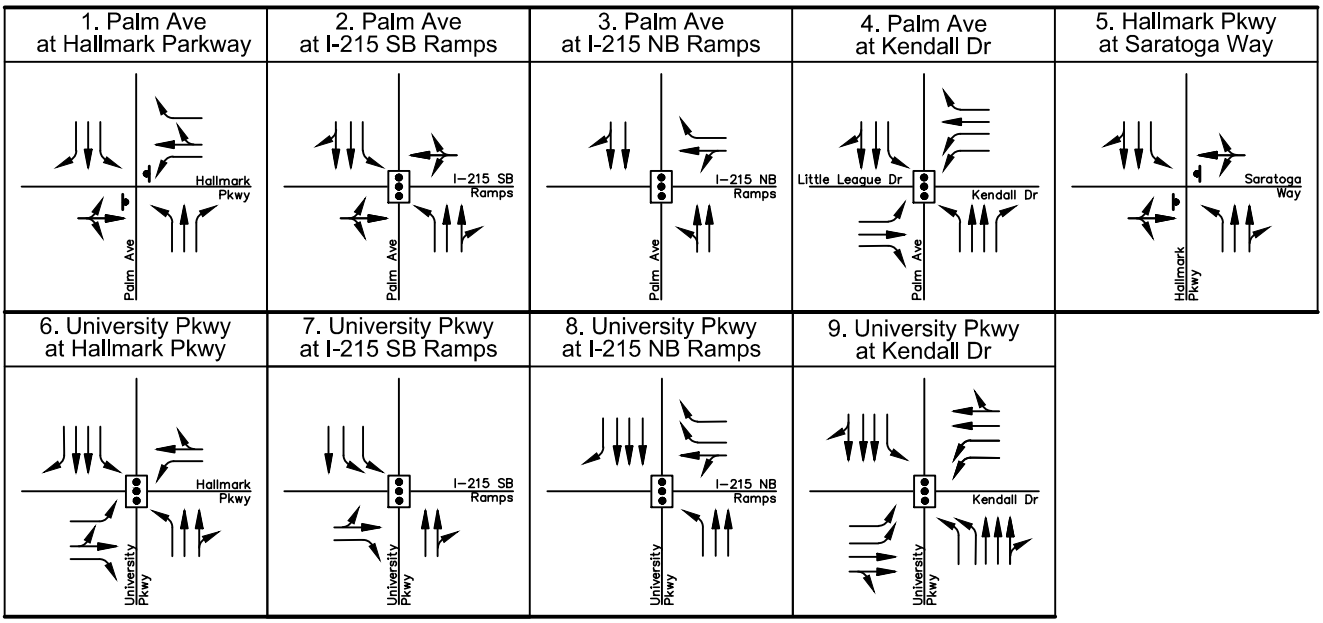
Georgia Boulevard – Georgia Boulevard is currently a two-lane roadway that provides direct access for local businesses and development and allows on-street parking. Georgia Boulevard provides direct access to the proposed project via two full-movement driveways.

Hallmark Parkway – Hallmark Parkway is currently a four-lane roadway through the study area with left-turn lanes at arterial intersections. Hallmark Parkway provides truck access for local businesses and development. The posted speed limit along Hallmark Parkway is 50 miles per hour, and on-street parking is not allowed. Hallmark Parkway is designated on the City of San Bernardino Circulation Element as a Secondary Arterial, which would provide four travel lanes within 88 feet of right-of-way.

University Parkway – University Parkway is currently a four- to six-lane roadway through the study area, with left-turn lanes at arterial intersections. University Parkway provides trucks access to Secondary Arterials and Collectors. The posted speed limit along University Parkway is 40 miles per hour. University Parkway is designated on the City of San Bernardino Circulation Element as a Major Arterial, which would provide six to eight travel lanes within 100 feet of right-of-way.

Kendall Drive – Kendall Drive is currently a two-lane roadway within the study area, with left-turn lanes at arterial intersections. The posted speed limit along Kendall Drive is 50 miles per hour. Kendall Drive is designated on the City of San Bernardino Circulation Element as a Major Arterial, which would provide six to eight travel lanes within 100 feet of right-of-way.

Palm Avenue – Palm Avenue is currently a two- to four-lane roadway within the study area, with left-turn lanes at arterial intersections. The posted speed limit along Palm Avenue is 45 miles per hour. Palm Avenue is designated on the City of San Bernardino Circulation Element as a Secondary Arterial, which would provide four travel lanes within 88 feet of right-of-way.



LEGEND:

- (X) = Study Intersection
- = Turn or Through Lane
- = Signal
- = Stop Sign

FIGURE 3
EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL

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General Plan Circulation Element

The City of San Bernardino General Plan Circulation Element provides roadway designations for the project site and the surrounding vicinity. A copy of the Circulation Element Vehicular Circulation Plan is provided on **Figure 4**.

Transit Service

Transit service to the project area is provided via the OmniTrans transit lines, which serve a number of San Bernardino cities in the area. Bus stops in the project vicinity are located near the intersection of Kendall Drive at Palm Avenue and near the Cal State San Bernardino campus on University Parkway. A description of the bus routes serving the project area is provided below.

OmniTrans Route 2 operates between the City of Loma Linda and the City of San Bernardino, traveling through San Bernardino along Kendall Drive and University Parkway in the project vicinity. Route 2 operates on weekdays from approximately 4:30 AM to 11:00 PM with approximately 1-hour headways (the time between bus arrivals), on Saturdays from approximately 6:30 AM to 10:00 PM with approximately 20-minute headways, and on Sundays from approximately 6:30 AM to 8:30 PM with approximately 20-minute headways.

OmniTrans Route 5 operates within the City of San Bernardino, traveling along Northpark Boulevard and University Parkway in the project vicinity. Route 5 operates on weekdays from approximately 4:45 AM to 11:15 PM with approximately 30-minute headways, on Saturdays from approximately 6:30 AM to 8:30 PM with approximately 1-hour headways, and on Sundays from approximately 6:30 AM to 7:30 PM with approximately 1-hour headways.

OmniTrans Route 7 operates within the City of San Bernardino, traveling along Northpark Boulevard and University Parkway in the project vicinity. Route 7 operates on weekdays from approximately 6:00 AM to 10:00 PM with approximately 30-minute headways, on Saturdays from approximately 7:00 AM to 6:00 PM with approximately 1-hour headways, and on Sundays from approximately 8:00 AM to 6:00 PM with approximately 1-hour headways.

OmniTrans Route 11 operates within the City of San Bernardino, traveling along University Parkway in the project vicinity. Route 11 operates on weekdays from approximately 5:30 AM to 10:30 PM with approximately 1-hour headways, on Saturdays from approximately 6:45 AM to 6:45 PM with approximately 1-hour headways, and on Sundays from approximately 7:30 AM to 7:00 PM with approximately 1-hour headways.

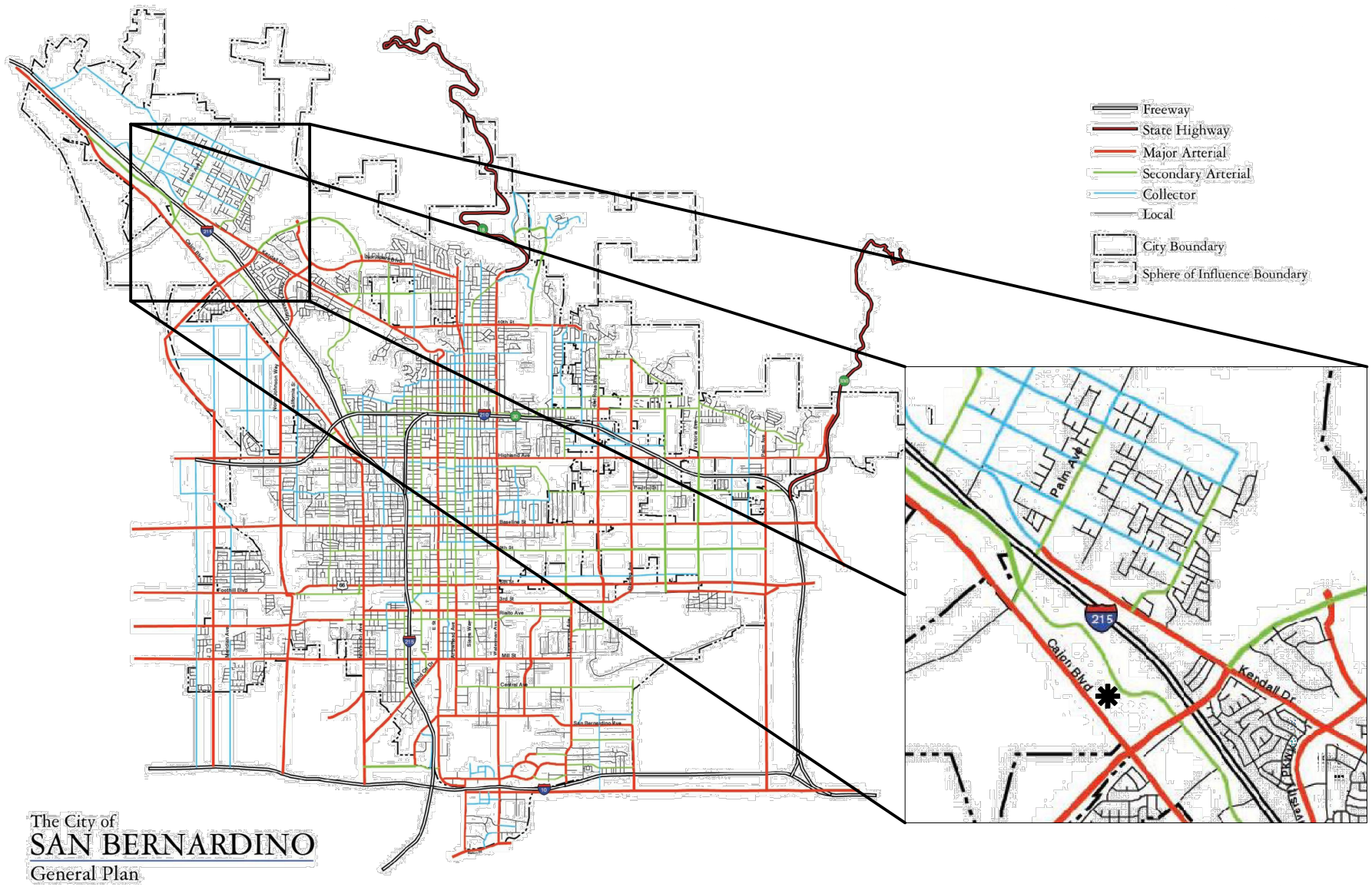


FIGURE 4
CITY OF SAN BERNARDINO
VEHICULAR CIRCULATION PLAN

Kimley»Horn

Existing Traffic Volumes

Existing morning and evening peak hour turning movement volumes were collected on a typical mid-week weekday (Tuesday, Wednesday, or Thursday) in March, 2016. Existing morning and evening peak hour volumes are presented on **Figure 5**. Peak hour intersection traffic count worksheets are provided in ***Appendix B***.

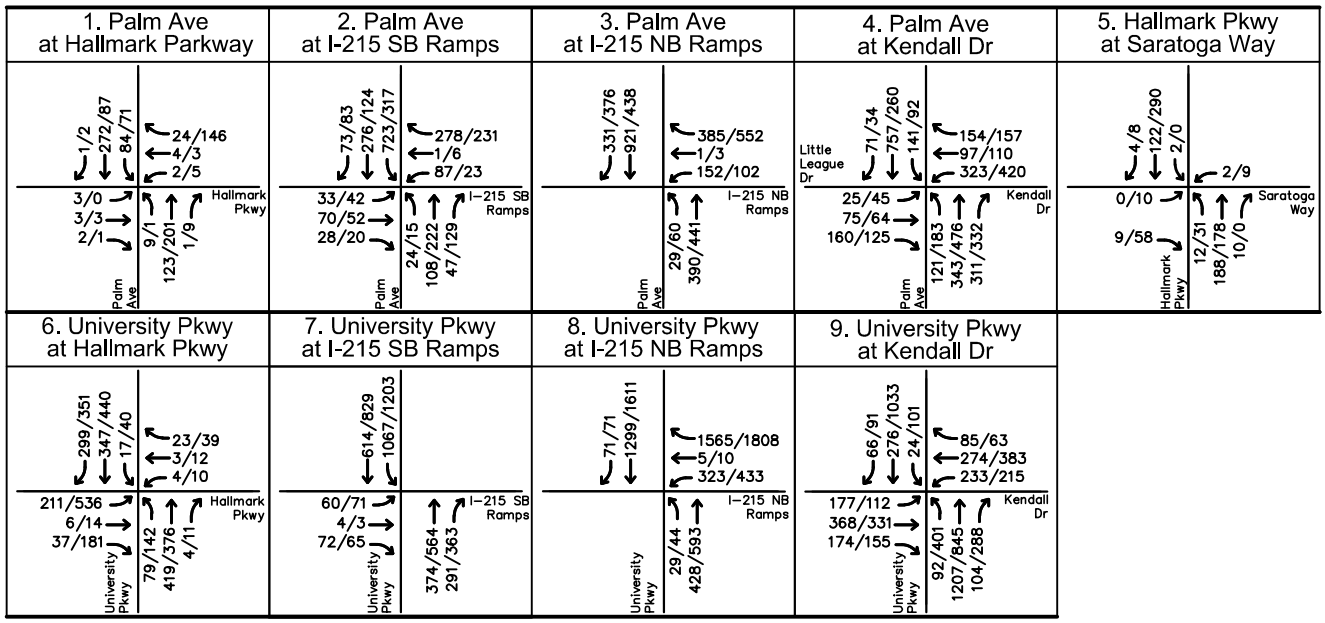
Existing Peak Hour Operating Conditions

Intersection Level of Service analysis was conducted for the morning and evening peak hours using the analysis procedures and assumptions described previously in this report. The results of the intersection analysis for Existing Conditions are shown on **Table 1**. Copies of Existing Conditions intersection analysis worksheets are provided in ***Appendix C***.

Review of this table indicates that the following intersections currently operate at an unacceptable Level of Service:

- #2 – Palm Avenue at I-215 Southbound Ramps: AM – LOS F
- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS F, PM – LOS F

NOT TO SCALE



LEGEND:

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 5
EXISTING PEAK HOUR TRAFFIC VOLUMES

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TABLE 1
SUMMARY OF INTERSECTION OPERATION
EXISTING CONDITIONS

Int. #	Intersection	Traffic Control	Peak Hour	Existing Conditions		
				Delay (sec/veh)	V/C	LOS
1	Palm Avenue at Hallmark Parkway	U	AM	16.7	0.460	C
			PM	15.0	0.390	B
2	Palm Avenue at I-215 SB Ramps	S	AM	86.3	1.002	F
			PM	37.1	0.627	D
3	Palm Avenue at I-215 NB Ramps	S	AM	21.3	0.743	C
			PM	23.2	0.695	C
4	Palm Avenue at Kendall Drive/Little League Drive	S	AM	33.1	0.657	C
			PM	31.0	0.579	C
5	Hallmark Parkway at Saratoga Way	U	AM	11.7	0.290	B
			PM	14.8	0.340	B
6	University Parkway at Hallmark Parkway	S	AM	31.3	0.431	C
			PM	32.0	0.559	C
7	University Parkway at I-215 SB Ramps	S	AM	25.2	0.685	C
			PM	35.3	0.800	D
8	University Parkway at I-215 NB Ramps	S	AM	84.9	1.058	F
			PM	126.4	1.192	F
9	University Parkway at Kendall Drive	S	AM	30.7	0.604	C
			PM	33.5	0.686	C

Notes:
Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst movement.
Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.
S = Signalized
U = Unsignalized

FUTURE CONDITIONS WITHOUT PROJECT

Opening Year 2017 Base Condition

The project Opening Year (the year the project would be constructed and occupied) is anticipated to be Year 2017. Based on consultation with City staff, an ambient growth rate of 3.0% per year to Opening Year 2017 was applied to existing traffic volumes to develop Opening Year 2017 Base forecasts. The resulting Opening Year 2017 Base peak hour turning movement volumes at the study intersections are shown in **Figure 6**.

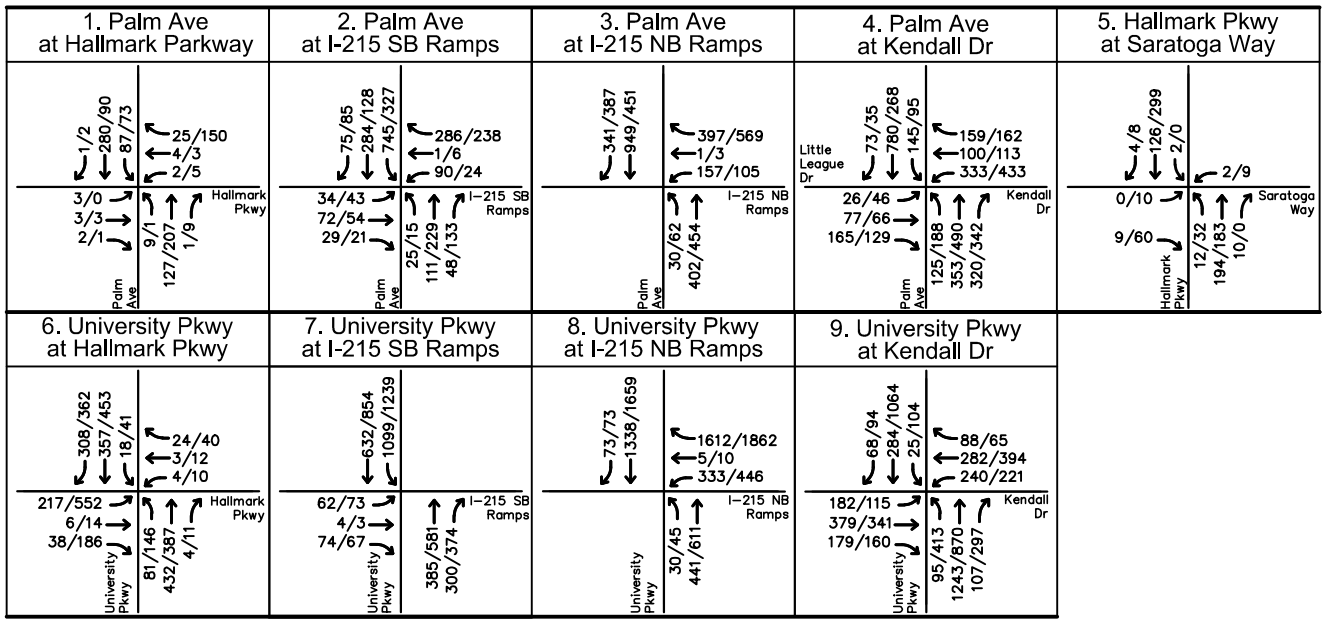
Peak Hour Operating Conditions

Intersection Level of Service analysis was conducted for the morning and evening peak hours for the Opening Year 2017 Base condition. The results are shown on **Table 2**. Intersection analysis worksheets for this scenario are provided in ***Appendix C***.

Review of this table indicates that the following intersections, with the addition of background growth, would operate at an unacceptable Level of Service:

- #2 – Palm Avenue at I-215 Southbound Ramps: AM – LOS F
- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS F, PM – LOS F

NOT TO SCALE



LEGEND:

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 6
OPENING YEAR 2017 BASE PEAK HOUR TRAFFIC VOLUMES

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TABLE 2
SUMMARY OF INTERSECTION OPERATIONS
OPENING YEAR 2017 BASE CONDITIONS

Int. #	Intersection	Peak Hour	Opening Year Base Conditions		
			Delay (sec/veh)	V/C	LOS
1	Palm Avenue at Hallmark Parkway	AM	17.2	0.460	C
		PM	15.3	0.400	C
2	Palm Avenue at I-215 SB Ramps	AM	94.6	1.032	F
		PM	37.9	0.647	D
3	Palm Avenue at I-215 NB Ramps	AM	16.2	0.461	B
		PM	24.0	0.715	C
4	Palm Avenue at Kendall Drive/Little League Drive	AM	33.7	0.677	C
		PM	31.4	0.597	C
5	Hallmark Parkway at Saratoga Way	AM	11.8	0.290	B
		PM	15.1	0.340	C
6	University Parkway at Hallmark Parkway	AM	31.7	0.444	C
		PM	32.5	0.576	C
7	University Parkway at I-215 SB Ramps	AM	26.1	0.704	C
		PM	39.0	0.824	D
8	University Parkway at I-215 NB Ramps	AM	113.3	1.114	F
		PM	138.7	1.227	F
9	University Parkway at Kendall Drive	AM	31.3	0.622	C
		PM	34.3	0.707	C

Notes:
Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst movement.
Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.

Opening Year 2017 Base Plus Other Projects Condition

Other Projects

Information about Other Projects in the area were provided by the City of San Bernardino. Other Projects consist of any project that has been approved but is not yet constructed/occupied, and projects that are in various stages of the application and approval process, but have not yet been approved. A summary of Other Projects in the project vicinity and the trip generation associated with each is provided on **Table 3**. The locations of the Other Projects are shown on **Figure 7**.

Trip Generation

Trip generation information for Other Projects was derived either from approved traffic studies, where available; or developed by Kimley-Horn if approved traffic studies were not available. Project information and trip generation assumptions for Other Projects are provided in ***Appendix D***.

Trip Distribution and Assignment

Likewise, trip distribution and assignment for the Other Projects were either derived from approved traffic studies, where available; or were developed by Kimley-Horn if approved traffic studies were not available. Trip distribution assumptions for Other Projects are provided in ***Appendix D***. Morning and evening peak hour turning movement volumes associated with the Other Projects were compiled for each of the study intersections and are shown on **Figure 8**.

Peak Hour Operating Conditions

The Other Projects peak hour turning movement volumes were added to the Opening Year 2017 Base traffic volumes. Morning and evening peak hour turning movement volumes for Opening Year 2017 Base Plus Other Projects are shown on **Figure 9**. Intersection Level of Service analysis was conducted for the morning and evening peak hours for the Opening Year 2017 Base Plus Other Projects condition. The results are shown on **Table 4**. Intersection analysis worksheets for this scenario are provided in ***Appendix C***.

Review of this table indicates that the following intersections would continue to operate at an unacceptable Level of Service, with the addition of Other Project traffic:

- #2 – Palm Avenue at I-215 Southbound Ramps: AM – LOS F
- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS F, PM – LOS F

TABLE 3
SUMMARY OF OTHER PROJECTS

Project Number	Location	Land Use	Quantity	Unit	Trip Generation Estimates						
					Daily	AM Peak Hour			PM Peak Hour		
						In	Out	Total	In	Out	Total
1	4020 E. Highland Avenue	Shopping Center	18.000	KSF	769	11	7	18	32	35	67
2	575 W. Baseline Street	Shopping Center	20.000	KSF	854	12	7	19	36	39	75
3	Waterman Gardens	Senior Adult Housing-Detached	74	DU	272	6	11	17	12	8	20
		Apartment	337	DU	2,241	34	137	171	136	73	209
		Residential Condominium/Townhouse	38	DU	221	3	14	17	13	7	20
4	1064 W. Highland Avenue	Fast-Food Restaurant w/ Drive-Through	2.300	KSF	1,141	53	51	104	39	36	75
5	1107 W. 5th Street	Tire Store	1.575	KSF	39	3	2	5	3	4	7
6	1241 W. 5th Street	Quality Restaurant	6.365	KSF	573	4	1	5	32	16	48
7	1890 West Highland Avenue	Shopping Center	12.400	KSF	529	7	5	12	22	24	46
8	216 E. Baseline Street	General Office Building	5.200	KSF	57	7	1	8	1	6	7
9	2226 W. Foothill Boulevard	Residential Condominium/Townhouse	53	DU	308	4	19	23	18	9	27
10	Palm Avenue and Industrial Parkway	High-Cube Warehouse/Distribution Center	678.275	KSF	1,140	52	23	75	25	56	81
11	2865 N. Golden Avenue	Residential Condominium/Townhouse	3	DU	17	0	1	1	1	1	2
12	1541 W. Baseline Street	Church	4.180	KSF	38	1	1	2	1	1	2
13	2586 Shenandoah Way	Waste Water Treatment in Existing Facility	N/A	N/A	*	4	2	6	0	1	1
14	3909 N. Hallmark Parkway	Convenience Market (Open 15-16 Hours)	0.650	KSF	*	10	10	20	11	11	22
15	4680 N. Hallmark Parkway	Church	120.000	KSF	1,093	42	26	68	32	34	66
16	Kendall Drive and Palm Avenue	Coffee/Donut Shop w/ D.T.	1.822	KSF	1,491	93	90	183	39	39	78
		Fast-Food Restaurant w/ Drive-Through	3.000	KSF	1,488	69	67	136	51	47	98
17	2424 Kendall Drive	Day Care Center	68	Student	298	29	26	55	26	29	55
18	University Parkway and State Street	Coffee/Donut Shop w/ D.T.	3.600	KSF	2,947	185	177	362	77	77	154
19	5th Street and Waterman Avenue	Gasoline Station w/ Convenience Market	12	Fueling Position	4,818	115	111	226	73	73	146
20	3972 N. Waterman Avenue	Hotel	25	Room	204	8	5	13	8	7	15
		General Office Building	-9.796	KSF	-108	-13	-2	-15	-2	-12	-14
21	2114 W. Highland Avenue	Gasoline Station w/ Conv. Mkt. & Car Wash	8	Fueling Position	1,223	48	46	94	57	54	111
22	Kendall Drive and Campus Parkway	Recreational Community Center	5.851	KSF	198	8	4	12	8	8	16
23	Olive Avenue and Verdemont Drive	Single-Family Detached Housing	6	DU	57	1	3	4	4	2	6
24	2705 W. Lexington Way	Warehousing	155.000	KSF	552	37	10	47	12	37	49
25	1320 N. Lassen Street	General Light Industrial	265.716	KSF	1,852	215	29	244	31	227	258
26	Hallmark Parkway and Shenandoah Way	Warehousing	340.080	KSF	1,211	81	21	102	27	82	109
27	Little League Drive and Palm Avenue (Rancho Palm Specific Plan)	Single-Family Detached Housing	132	DU	1,257	25	74	99	83	49	132
		Shopping Center	98.000	KSF	4,185	58	36	94	175	189	364
28	Lytle Creek SP (10% of Capacity)	Single-Family Detached Housing	504	DU	4,823	95	284	379	321	188	509
		Condominium	336	DU	1,952	25	123	148	117	58	175
29	Renaissance Marketplace (25% of Capacity)	Hotel	110.000	ROOMS	225	10	6	16	9	8	16
		Gasoline/Service Station	4.200	KSF	177	7	6	13	7	7	15
		Fast-Food Restaurant w/ D.T.	9.400	KSF	1,166	59	57	116	41	38	80
		South Side Area	523.567	KSF	3,335	53	24	77	137	154	291
		Internal Capture (Between North and South)			-177	-8	-8	-16	-7	-7	-14
Total Project Trips					42,466	1,453	1,508	2,960	1,708	1,716	3,423

KSF = Thousand Square Feet, DU = Dwelling Units

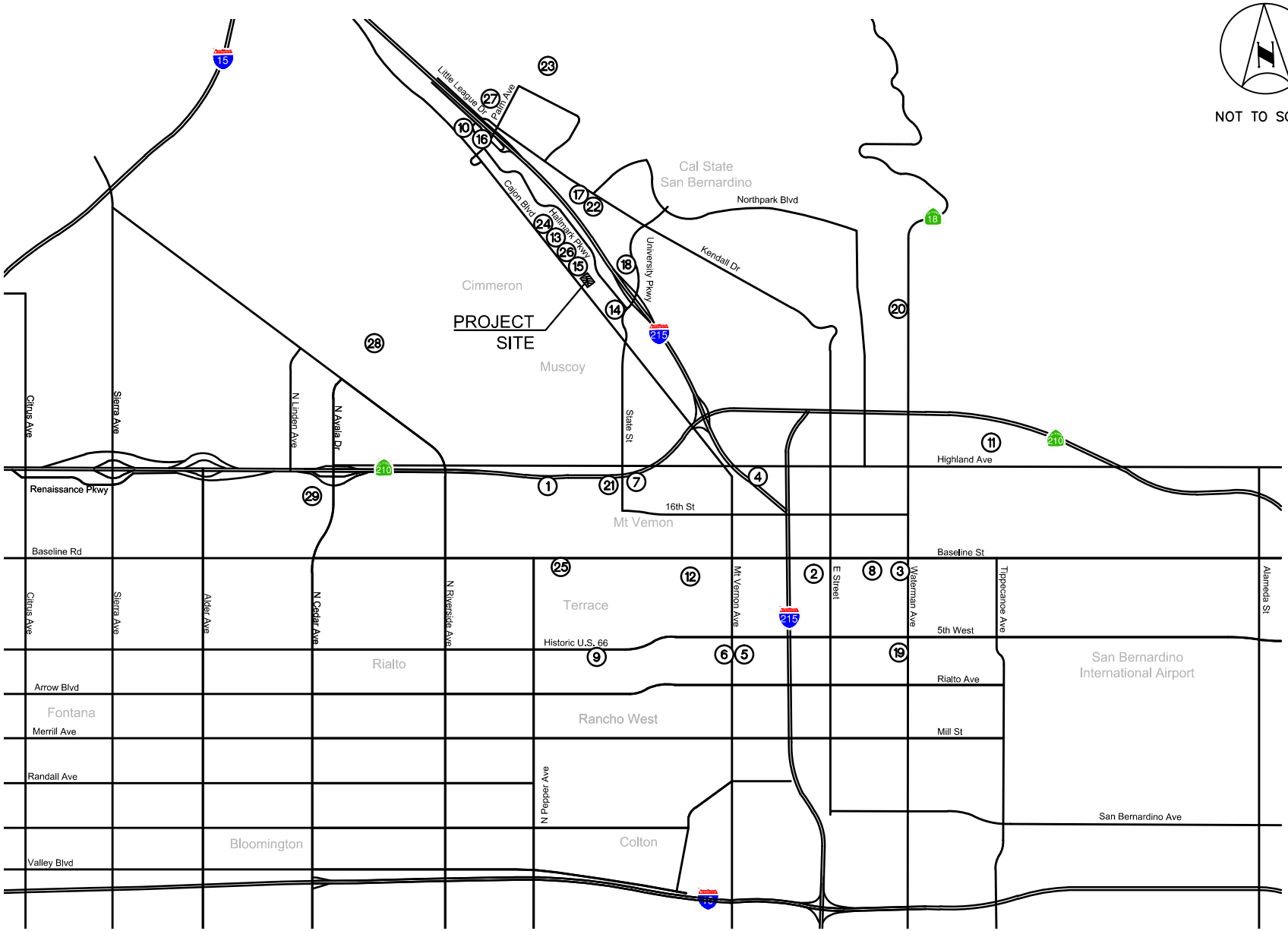

FIGURE 7
LOCATION OF OTHER PROJECTS

LEGEND:

(X) = Other Project Location

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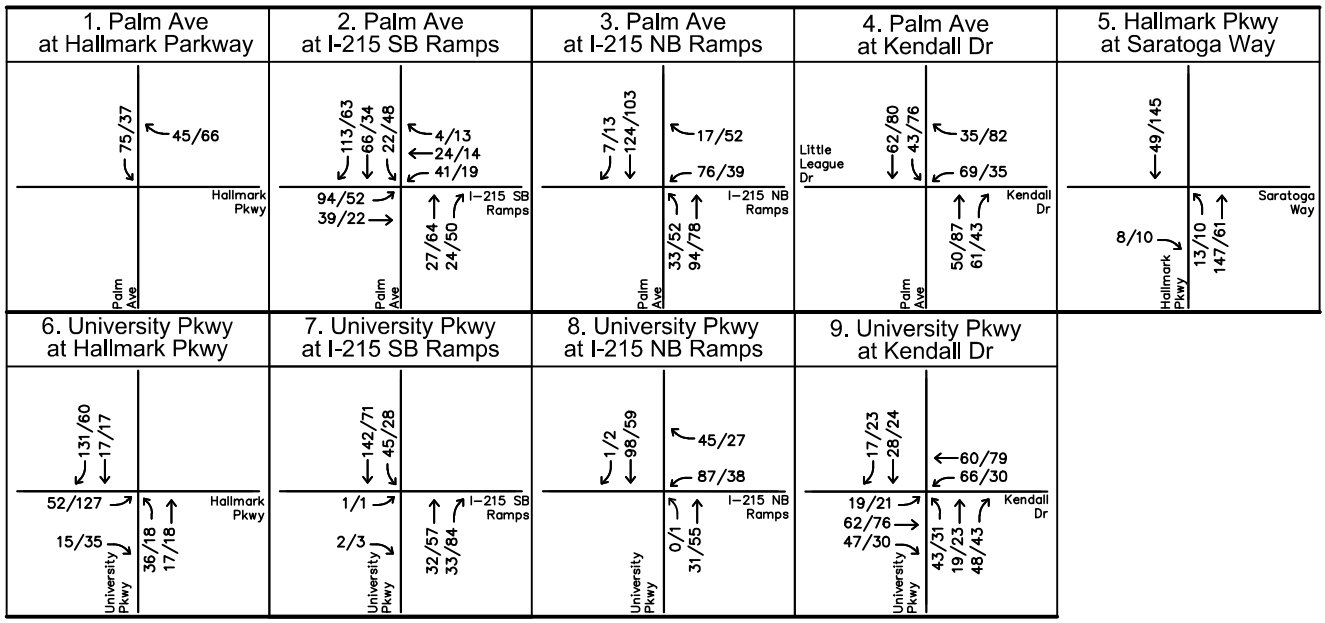
NOT TO SCALE



LEGEND:

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 8
OTHER PROJECTS PEAK HOUR TRAFFIC VOLUMES

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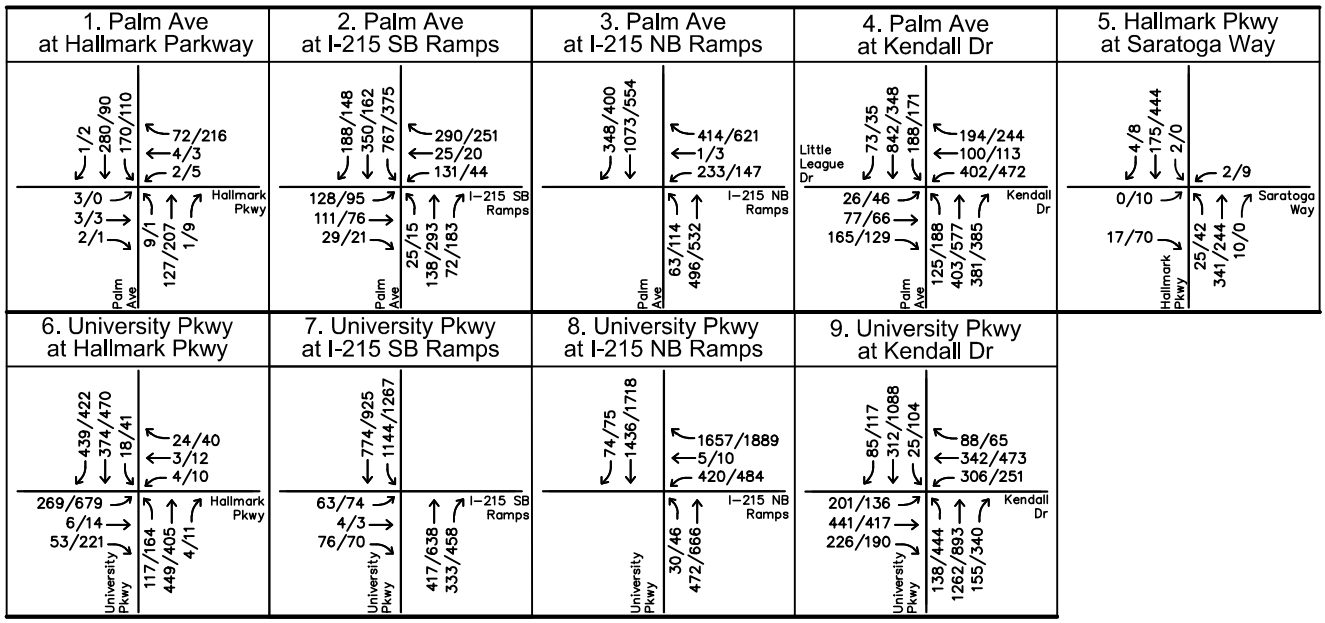

LEGEND:

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 9
OPENING YEAR 2017 PLUS OTHER PROJECTS PEAK HOUR TRAFFIC VOLUMES

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TABLE 4
SUMMARY OF INTERSECTION OPERATIONS
OPENING YEAR BASE PLUS OTHER PROJECTS CONDITIONS

Int. #	Intersection	Peak Hour	Opening Year Base Conditions		
			Delay (sec/veh)	V/C	LOS
1	Palm Avenue at Hallmark Parkway	AM	23.4	0.460	C
		PM	18.7	0.430	C
2	Palm Avenue at I-215 SB Ramps	AM	146.5	1.219	F
		PM	47.7	0.804	D
3	Palm Avenue at I-215 NB Ramps	AM	24.6	0.961	C
		PM	30.0	0.965	C
4	Palm Avenue at Kendall Drive/Little League Drive	AM	38.2	0.762	D
		PM	38.4	0.698	D
5	Hallmark Parkway at Saratoga Way	AM	14.6	0.360	B
		PM	19.7	0.420	C
6	University Parkway at Hallmark Parkway	AM	35.0	0.584	C
		PM	34.8	0.640	C
7	University Parkway at I-215 SB Ramps	AM	28.2	0.747	C
		PM	41.7	0.870	D
8	University Parkway at I-215 NB Ramps	AM	127.6	1.160	F
		PM	147.8	1.253	F
9	University Parkway at Kendall Drive	AM	35.5	0.703	D
		PM	38.3	0.781	D

Notes:
Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst movement.
Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.

PROJECT TRAFFIC

Project Trip Generation

Trip generation estimates for the IPT I-215 Distribution Center II (Georgia) project are based on daily and peak hourly trip generation rates obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual (9th Edition). ITE trip generation estimates for the project are based on the trip generation rates for ITE Land Use: Warehouse (Land Use 150).

Passenger vehicle and truck mix rates for the project were derived from the City of Fontana Truck Trip Generation Study, published in August 2003, which indicates that truck trips for a warehouse use make up approximately 19.70% of the project trips on a daily basis.

The Fontana study specifies a minimum truck rate of 19.70% of total project traffic, with 51% of trucks being 4+-axle, 23% 3-axle, and 26% 2-axle. These vehicle classification splits were applied to the daily and peak hour trip generation to develop an estimate of truck volumes by number of axles (2-axle, 3-axle, and 4+-axle trucks) that would be associated with the proposed project.

Passenger car equivalent (PCE) factors, per City recommendations, were then applied to the truck types, based on number of axles (2.0 PCE for 2-axle trucks, 2.5 PCE for 3-axle trucks, and 3.0 PCE for 4+-axle trucks) to determine the total PCE volumes to be generated by the project.

The use of the ITE Trip Generation Manual to estimate project trips and the Fontana Truck Trip Study to determine the truck mix for the warehouse use is in accordance with the SANBAG Congestion Management Program (CMP) traffic study requirements (Appendix I) and current City policy.

Trip generation rates, PCE factors, and the resulting trip generation estimates for the IPT I-215 Distribution Center II (Georgia) Project are summarized on **Table 5**. With the PCE factors, the project is estimated to generate 722 PCE trips on a daily basis, with 61 PCE trips in the morning peak hour, and 65 PCE trips in the evening peak hour.

Trip Distribution and Assignment

Trip distribution assumptions for the project were developed taking into account the proposed site uses, and the routes to and from the freeway system for the warehouse trucks. Separate distribution patterns were assumed for passenger car trips and truck trips. Trip distribution assumptions are shown on **Figure 10** for passenger vehicles and on **Figure 11** for trucks.

Trip distribution percentages at each study intersection were applied to the project trip generation to determine the project trips through each intersection. The resulting project-related peak hour trips at the study intersections are shown on **Figure 12**.

TABLE 5
SUMMARY OF PROJECT TRIP GENERATION
IPT I-215 DISTRIBUTION CENTER II

TRIP GENERATION RATES [1]

ITE Land Use	ITE Code	Unit	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Warehousing	150	KSF	3.560	0.237	0.063	0.300	0.080	0.240	0.320

PROJECT TRIP GENERATION

Project Land Use		Quantity	Unit	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Warehousing		153.010	KSF	545	36	10	46	12	37	49
Passenger Vehicles	80.30%			438	29	8	37	10	30	40
Trucks	19.70%			107	7	2	9	2	7	9

PROJECT TRIPS - PASSENGER CAR EQUIVALENTS (PCE)

Vehicle Type	Vehicle Mix [2]	Daily Vehicles	PCE Factor [3]	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Passenger Vehicles	80.3%	438	1.0	438	29	8	37	10	30	40
2-Axle Trucks	5.2%	28	2.0	56	4	1	5	1	4	5
3-Axle Trucks	4.5%	25	2.5	63	4	1	5	1	4	5
4+ Axle Trucks	10.0%	55	3.0	165	11	3	14	4	11	15
Total Truck PCE Trips				284	19	5	24	6	19	25
Total Project PCE Trips				722	48	13	61	16	49	65

[1] Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition
[2] Source: Truck Trip Generation Study - City of Fontana, August 2003.
[3] Source: City of San Bernardino Traffic Impact Study Guidelines, June 2015.

PCE = Passenger Car Equivalent

KSF = Thousand Square Feet

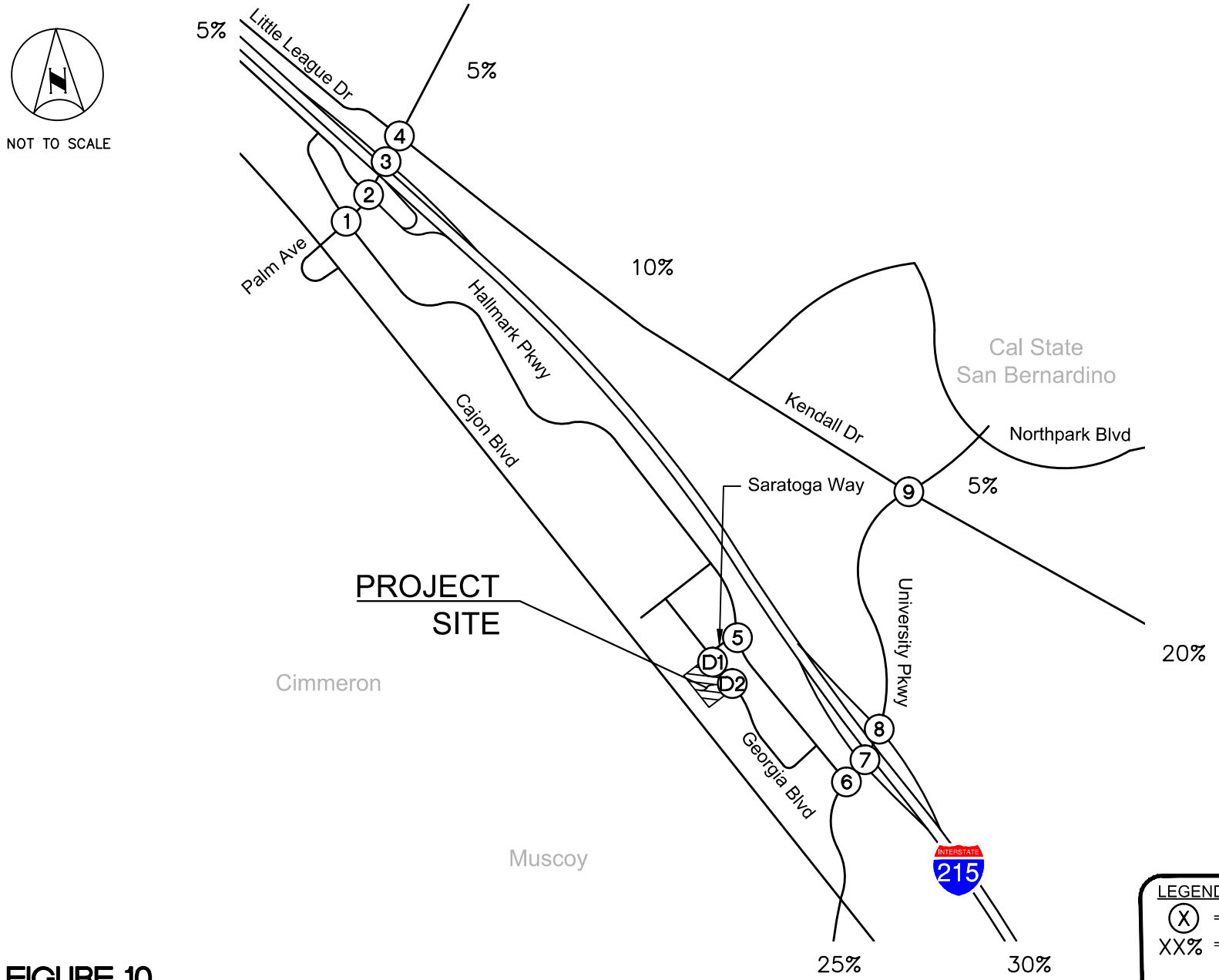

FIGURE 10
PROJECT TRIP DISTRIBUTION – PASSENGER VEHICLES

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LEGEND:
X = Study Intersection
XX% = Truck Trip Distribution Percentage

FIGURE 11
PROJECT TRIP DISTRIBUTION – TRUCKS

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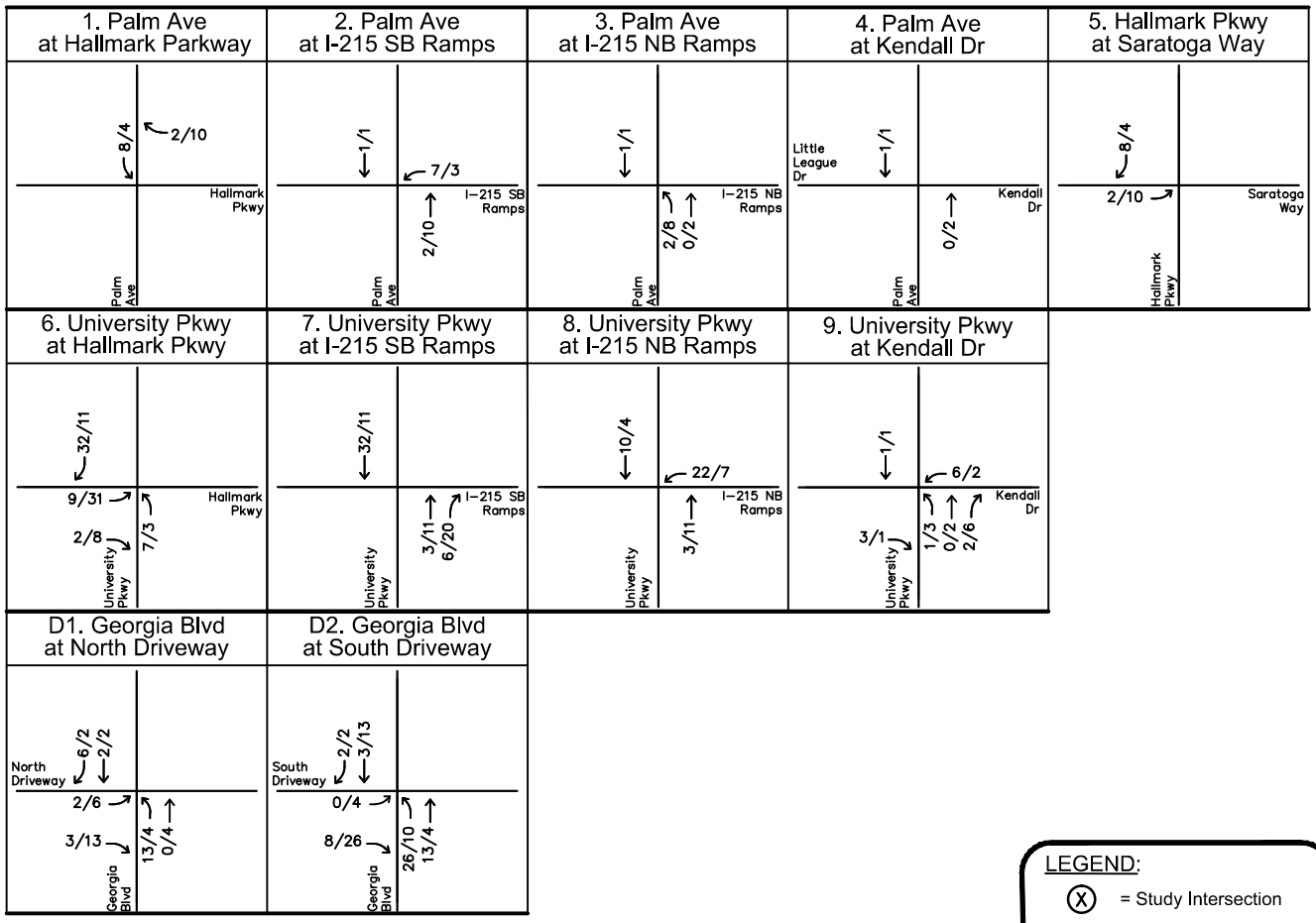
NOT TO SCALE



LEGEND:

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 12
PROJECT-RELATED PEAK HOUR TRAFFIC VOLUMES

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FUTURE CONDITIONS WITH PROJECT

Opening Year 2017 Base Plus Other Projects Plus Project

Project-related traffic was added to the Opening Year 2017 Base Plus Other Projects traffic volumes, and the resulting peak hour turning movement volumes at the study intersections are shown on **Figure 13**.

Peak Hour Operating Conditions

Intersection Level of Service analysis was conducted for the morning and evening peak hours for the Opening Year 2017 Base Plus Other Projects Plus Project condition. The results of the intersection analysis, including the results at the site driveways are shown on **Table 6**. Copies of intersection analysis worksheets for this scenario are provided in ***Appendix C***.

Review of this table indicates that the following intersections, with the addition of Project traffic, would continue to operate at an unacceptable Level of Service:

- #2 – Palm Avenue at I-215 Southbound Ramps: AM – LOS F
- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS F, PM – LOS F

The project would not result in a significant impact to any of the study intersections in the Opening Year 2017 Base Plus Other Project Plus Project scenario.

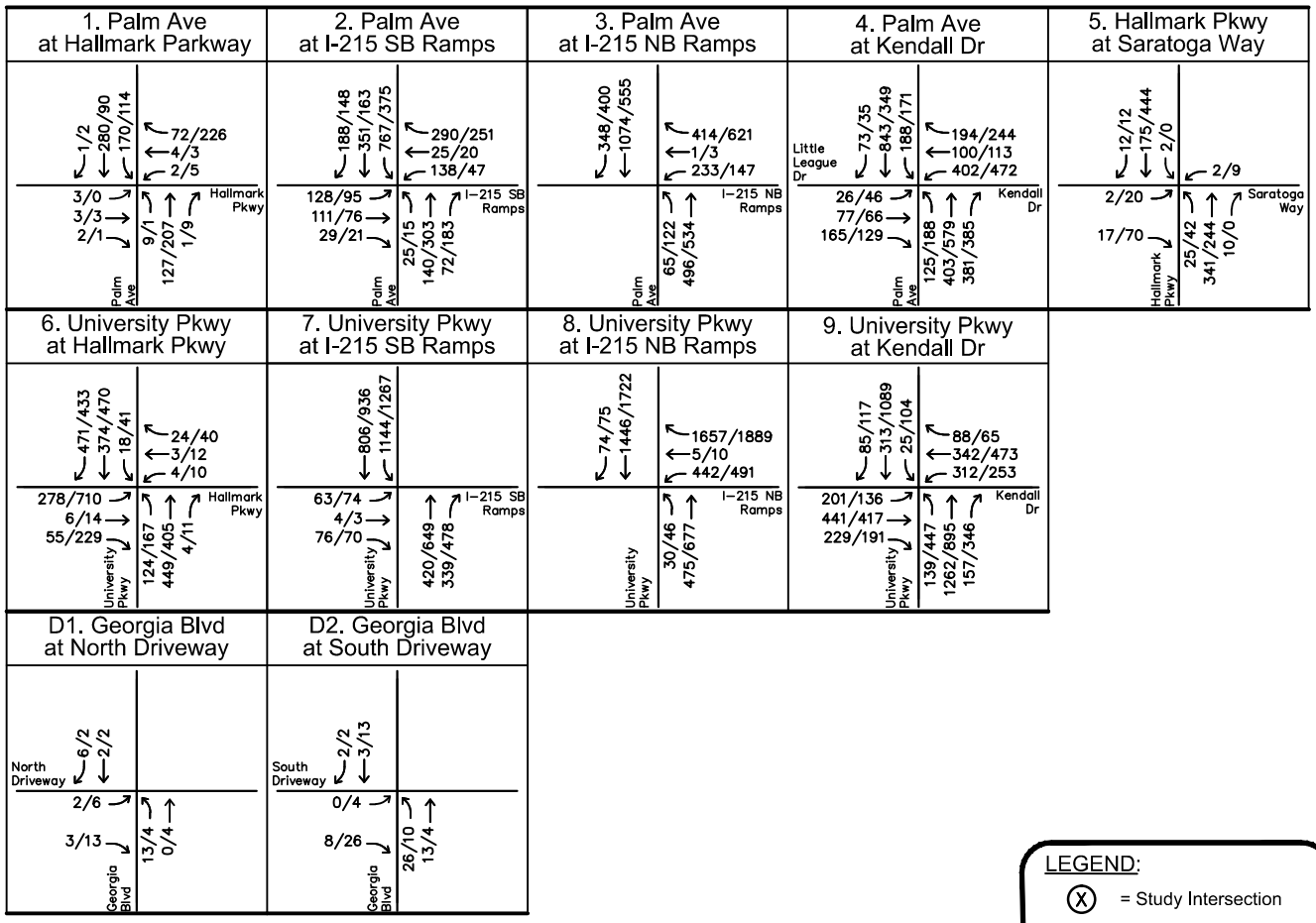
FUTURE BUILD-OUT CONDITIONS

Future Build-Out 2035 Cumulative Base Conditions

To derive the Future Build-Out 2035 Cumulative Base intersection turning movement volumes, the San Bernardino Transportation Analysis Model (SBTAM) base year 2012 and build-out year 2040 future traffic projections were used. However, it was first necessary to post-process the raw volumes obtained from the model output. This process involved determining the annual growth between the base model year and the future model year, and applying the resulting growth to existing count volumes. The B-Turns analysis worksheets, developed by the Federal Highway Administration (FHWA), translate the grown volumes into peak hour turning movements. Both SBTAM Model plots and B-Turns analysis worksheets are provided in ***Appendix E.*** The resulting traffic volumes for Future Build-Out 2035 Cumulative Base are shown on **Figure 14**.

Lane geometrics for the study intersections are assumed to be the same as Existing Conditions, previously shown on Figure 3. There are no programmed improvements in the study area based on the Southern California Association of Governments (SCAG) Regional Transportation Plan.

NOT TO SCALE



LEGEND:

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

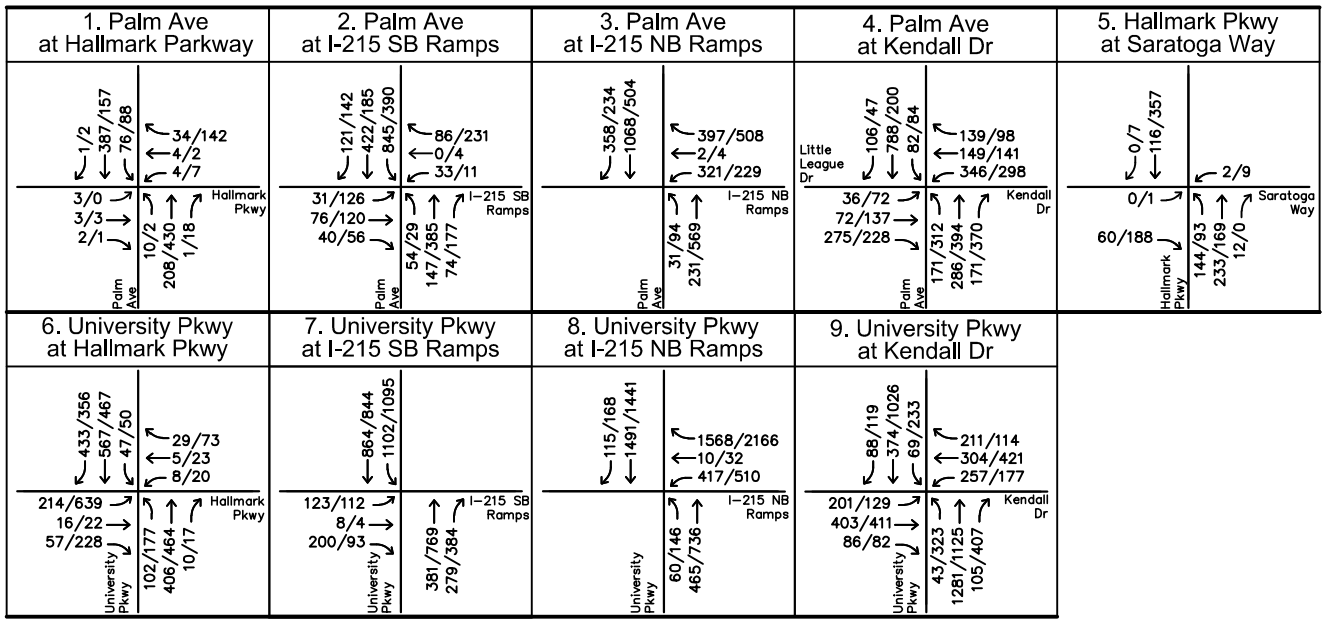
FIGURE 13
OPENING YEAR 2017 PLUS OTHER PROJECTS PLUS PROJECT PEAK HOUR TRAFFIC VOLUMES

Kimley»Horn

TABLE 6
SUMMARY OF INTERSECTION OPERATIONS
OPENING YEAR BASE PLUS OTHER PROJECTS PLUS PROJECT

Int. #	Intersection	Peak Hour	Opening Year Base Plus Other Projects			Opening Year Base Plus Other Projects Plus Project			Project Impact / Significance		
			Delay (sec/veh)	V/C	LOS	Delay (sec/veh)	V/C	LOS	Delay (sec/veh)	V/C	Sig.
1	Palm Avenue at Hallmark Parkway	AM	23.4	0.460	C	24.2	0.460	C	0.8	0.000	No
		PM	18.7	0.430	C	19.2	0.430	C	0.5	0.000	No
2	Palm Avenue at I-215 SB Ramps	AM	146.5	1.219	F	148.4	1.226	F	1.9	0.007	No
		PM	47.7	0.804	D	48.0	0.809	D	0.3	0.005	No
3	Palm Avenue at I-215 NB Ramps	AM	24.6	0.961	C	24.6	0.991	C	0.0	0.030	No
		PM	30.0	0.965	C	30.2	1.001	C	0.2	0.036	No
4	Palm Avenue at Kendall Drive/Little League Drive	AM	38.2	0.762	D	38.2	0.762	D	0.0	0.000	No
		PM	38.4	0.698	D	38.4	0.698	D	0.0	0.000	No
5	Hallmark Parkway at Saratoga Way	AM	14.6	0.360	B	14.7	0.360	B	0.1	0.000	No
		PM	19.7	0.420	C	20.2	0.430	C	0.5	0.010	No
6	University Parkway at Hallmark Parkway	AM	35.0	0.584	C	36.3	0.607	D	1.3	0.023	No
		PM	34.8	0.640	C	35.3	0.652	D	0.5	0.012	No
7	University Parkway at I-215 SB Ramps	AM	28.2	0.747	C	28.4	0.751	C	0.2	0.004	No
		PM	41.7	0.870	D	43.5	0.882	D	1.8	0.012	No
8	University Parkway at I-215 NB Ramps	AM	127.6	1.160	F	128.5	1.163	F	0.9	0.003	No
		PM	147.8	1.253	F	147.9	1.254	F	0.1	0.001	No
9	University Parkway at Kendall Drive	AM	35.6	0.703	D	35.8	0.707	D	0.2	0.004	No
		PM	38.3	0.781	D	38.5	0.783	D	0.2	0.002	No
10	Georgia Boulevard at North Driveway	AM	N/A	--	--	8.7	0.200	A	N/A	--	--
		PM	N/A	--	--	8.7	0.200	A	N/A	--	--
11	Georgia Boulevard at South Driveway	AM	N/A	--	--	9.0	0.200	A	N/A	--	--
		PM	N/A	--	--	8.8	0.200	A	N/A	--	--

Notes:
Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst movement.
Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.



LEGEND:

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 14
FUTURE BUILD-OUT 2035 CUMULATIVE BASE PEAK HOUR TRAFFIC VOLUMES

Kimley»Horn

Peak Hour Operating Conditions

Intersection Level of Service analysis was conducted for the morning and evening peak hours for the Future Build-Out 2035 Cumulative Base condition. The results of the intersection analysis are shown on **Table 7**. Copies of intersection analysis worksheets for this scenario are provided in ***Appendix C***.

Review of this table indicates that the following intersections, under Build-out 2035 conditions, would operate at an unacceptable Level of Service:

- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS E, PM – LOS F

Future Build-Out 2035 Cumulative Base Plus Project Conditions

Project-related traffic was added to the Build-Out 2035 Cumulative Base traffic volumes. Build-out 2035 Cumulative Base Plus Project peak hour turning movement volumes at study intersections are shown on **Figure 15**.

Peak Hour Operating Conditions

Intersection Level of Service analysis was conducted for the morning and evening peak hours for the Future Build-Out 2035 Cumulative Base Plus Project condition. The results of the intersection analysis are shown on Table 7 (mentioned previously). Copies of intersection analysis worksheets for this scenario are provided in ***Appendix C***.

Review of this table indicates that the following intersections, with the addition of Project traffic, would continue to operate at an unacceptable Level of Service:

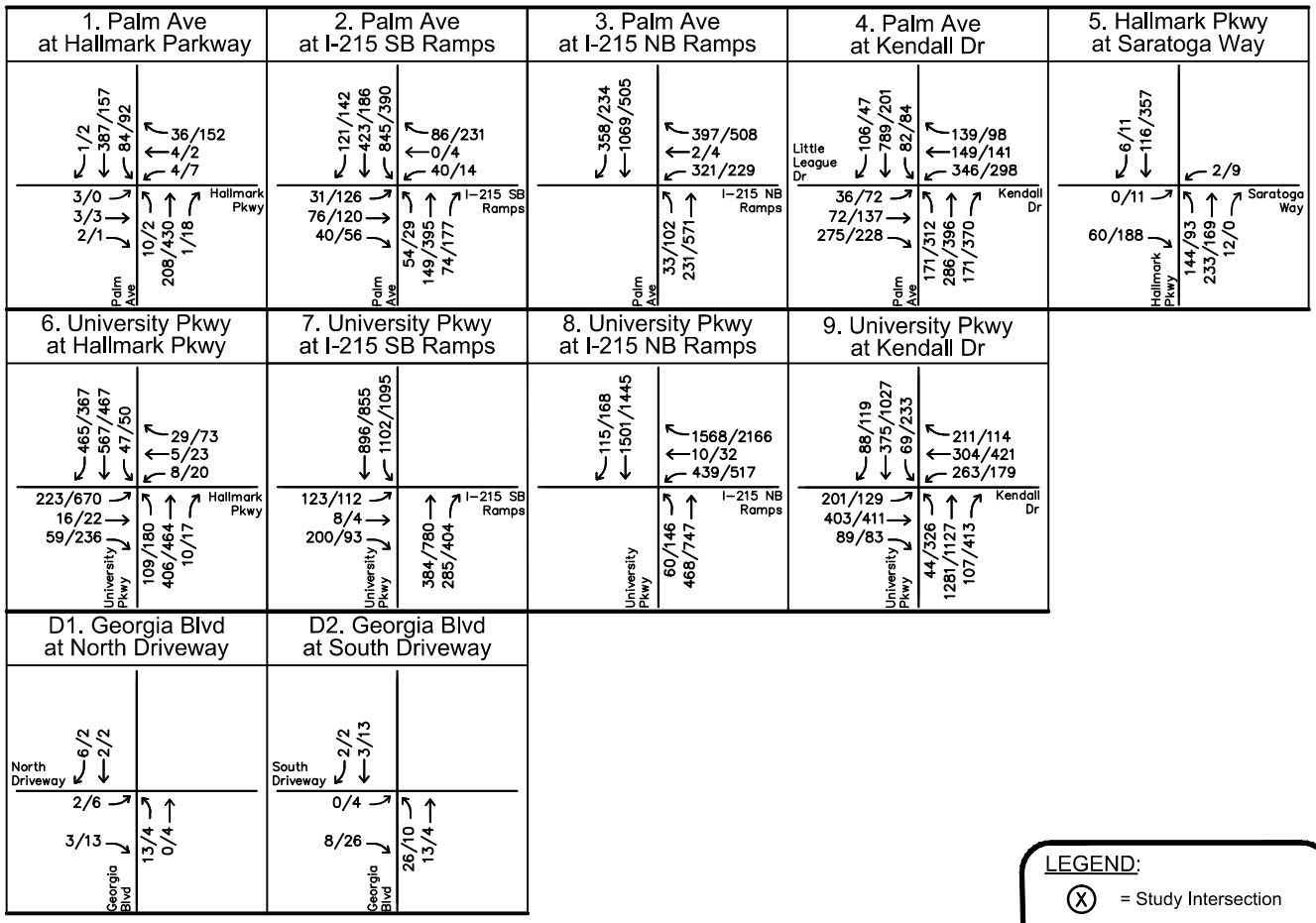
- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS E, PM – LOS F

The project would not result in a significant impact to any of the study intersections in the Future Build-Out 2035 Cumulative Base Plus Project scenario.

TABLE 7
SUMMARY OF INTERSECTION OPERATIONS
FUTURE BUILD-OUT YEAR 2035 WITHOUT AND WITH PROJECT

Int. #	Intersection	Peak Hour	Build-out Conditions Without Project			Build-out Conditions With Project			Project Impact / Significance		
			Delay (sec/veh)	V/C	LOS	Delay (sec/veh)	V/C	LOS	Delay (sec/veh)	V/C	Sig.
1	Palm Avenue at Hallmark Parkway	AM	18.7	0.500	C	19.2	0.500	C	0.5	0.000	No
		PM	22.6	0.540	C	23.3	0.540	C	0.7	0.000	No
2	Palm Avenue at I-215 SB Ramps	AM	38.4	0.783	D	38.9	0.787	D	0.5	0.004	No
		PM	47.0	0.825	D	47.7	0.830	D	0.7	0.005	No
3	Palm Avenue at I-215 NB Ramps	AM	19.8	0.460	B	19.9	0.460	B	0.1	0.000	No
		PM	21.6	0.663	C	21.9	0.675	C	0.3	0.012	No
4	Palm Avenue at Kendall Drive/Little League Drive	AM	35.1	0.711	D	35.1	0.711	D	0.0	0.000	No
		PM	32.0	0.590	C	32.0	0.590	C	0.0	0.000	No
5	Hallmark Parkway at Saratoga Way	AM	16.2	0.300	C	16.2	0.300	C	0.0	0.000	No
		PM	18.1	0.440	C	18.6	0.450	C	0.5	0.010	No
6	University Parkway at Hallmark Parkway	AM	34.4	0.591	C	35.4	0.619	D	1.0	0.028	No
		PM	33.0	0.595	C	33.3	0.604	C	0.3	0.009	No
7	University Parkway at I-215 SB Ramps	AM	25.0	0.733	C	25.1	0.736	C	0.1	0.003	No
		PM	33.8	0.808	C	34.6	0.819	C	0.8	0.011	No
8	University Parkway at I-215 NB Ramps	AM	56.3	0.979	E	56.9	0.981	E	0.6	0.002	No
		PM	133.4	1.257	F	133.6	1.258	F	0.2	0.001	No
9	University Parkway at Kendall Drive	AM	30.0	0.588	C	30.1	0.592	C	0.1	0.004	No
		PM	34.2	0.714	C	34.3	0.718	C	0.1	0.004	No
10	Georgia Boulevard at North Driveway	AM	N/A	--	--	8.7	0.200	A	N/A	--	--
		PM	N/A	--	--	8.7	0.200	A	N/A	--	--
11	Georgia Boulevard at South Driveway	AM	N/A	--	--	9.0	0.200	A	N/A	--	--
		PM	N/A	--	--	8.8	0.200	A	N/A	--	--

Notes:
Bold and shaded values indicate intersections operating at LOS E or F or significant impact to intersection per City standards.
At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
At a two-way stop-controlled intersection, delay refers to the average vehicle delay on the worst movement.
Delay values are based on the methodology outlined in the 2010 Highway Capacity Manual.



LEGEND:

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 15
FUTURE BUILD-OUT 2035 CUMULATIVE BASE PLUS PROJECT PEAK HOUR TRAFFIC VOLUMES

Kimley»Horn

MITIGATION MEASURES

Based on the analysis of each scenario, the project would not result in a significant impact to any of the study intersections and study scenarios. Therefore, there are no mitigation measures required.

SITE CIRCULATION

Vehicular access provisions for the project site would consist of two full-movement driveways on Georgia Boulevard for both trucks and passenger vehicles. Passenger vehicles would enter the site via either of the driveways, depending on which is closest to their parking area destination. Trucks would enter and exit the site via either of the driveways, depending on dock availability on either end of the project site. Both entrances to the site would be unsignalized. Each driveway will have a width dimension of 40 feet.

Drive aisle widths range from 30 feet to 35 feet along the east, north and south sides of the building, and would be 67 feet along the west side of the building where the truck docks are located. The project site will include 92 parking stalls for passenger vehicles, 51 parking stalls for trucks, and 30 truck docks.

A traffic signal warrant analysis was completed for each of project driveways. Each driveway operates at an acceptable Level of Service in each of the With Project analysis scenarios and would not satisfy traffic signal warrants; therefore, the project driveways would not require signalization.

SIGHT DISTANCE

Sight distance field observations revealed that Georgia Boulevard is a straight and flat street, which is conducive to good sight distance conditions.

The site driveways and project improvements will be designed so that adequate sight distance for drivers entering and exiting the site is maintained. The line of sight, which is a straight line between the driver's eye and oncoming vehicles on the adjacent roadway (Georgia Boulevard) – defines the Limited Use Area. The Limited Use Area for each driveway will be kept clear of visual obstructions, including project signage, building structures, walls, planters, and landscaping in order to maintain adequate sight distance.

FINDINGS AND CONCLUSIONS

This traffic impact study, which evaluates the project-related impacts associated with the development of the IPT I-215 Distribution Center II (Georgia), has been prepared according to the City of San Bernardino *Traffic Impact Study Guidelines*. The project is estimated to generate 722 daily trips, 61 morning peak hour trips, and 65 evening peak hour trips after applying passenger car equivalent (PCE) factors.

Existing traffic volumes for study intersections were collected in March 2016. Existing volumes, along with existing lane geometrics and traffic control at each intersection were used in conducting peak hour Level of Service (LOS) analyses. Under Existing Conditions, the following intersections currently operate at an unacceptable Level of Service:

- #2 – Palm Avenue at I-215 Southbound Ramps: AM – LOS F
- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS F, PM – LOS F

The Opening Year 2017 Base Scenario includes a 3% ambient growth rate over a one-year period, applied to Existing traffic volumes. Under the Opening Year 2017 Base conditions, the following intersections would continue to operate at an unacceptable Level of Service:

- #2 – Palm Avenue at I-215 Southbound Ramps: AM – LOS F
- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS F, PM – LOS F

Traffic from Other Projects was added to Opening Year Base traffic volumes to establish the conditions for the Opening Year Base Plus Other Projects Scenario. Under this scenario, the following intersections would continue to operate at an unacceptable Level of Service:

- #2 – Palm Avenue at I-215 Southbound Ramps: AM – LOS F
- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS F, PM – LOS F

Project Traffic was added to Opening Year Base Plus Other Projects traffic volumes to establish the conditions for the Opening Year Base Plus Other Projects Plus Project Scenario. Under this scenario, the following intersections would continue to operate at an unacceptable Level of Service:

- #2 – Palm Avenue at I-215 Southbound Ramps: AM – LOS F
- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS F, PM – LOS F

The project would not result in a significant impact to any of the study intersections in the Opening Year Base Plus Other Project Plus Project scenario.

The San Bernardino Transportation Analysis Model (SBTAM) was used to develop volumes for the Future Build-Out 2035 Cumulative Base Scenario. Under this scenario, the following intersections would operate at an unacceptable Level of Service:

- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS E, PM – LOS F

Project traffic was added to Future Build-Out 2035 Cumulative Base traffic volumes to establish the conditions for the Future Build-Out 2035 Cumulative Base Plus Project Scenario. Under this scenario, the following intersections would continue to operate at an unacceptable Level of Service:

- #8 – University Parkway at I-215 Northbound Ramps: AM – LOS E, PM – LOS F

The project would not result in a significant impact to any of the study intersections in the Future Build-Out 2035 Cumulative Base Plus Project scenario.

APPENDIX A

APPROVED SCOPING AGREEMENT

Scope of Study Form

To be completed by applicant and approved by Development Services prior to start of study

Project Name: IPT I-215 Distribution Center II
Project Address: Georgia Boulevard
Project Description: 150 ksf Warehouse
Developer's Name: RDP Development for Industrial Property Trust
Address: 4675 MacArthur Court Suite 625, Newport Beach, CA 92660
Telephone No. (949) 862-4900 Fax Number:
Email Address:

Trip Generation Rates From: ITE 9th Ed. Other: Fontana Truck Trip Study for PCE

See Attached) **Trip Generation For:**

Land Use (1)	Warehouse	Land Use (2)	
ITE Land Use Code	150	ITE Land Use Code	
Daily Trips	683	Daily Trips	
AM Peak Hour Trips		AM Peak Hour Trips	
Inbound	46	Inbound	
Outbound	12	Outbound	
Total	58	Total	
PM Peak Hour Trips		PM Peak Hour Trips	
Inbound	16	Inbound	
Outbound	46	Outbound	
Total	62	Total	

(Use Additional Sheet(s), if necessary)

Pass-by Trips (%), if applicable: 0 %

Land Use (1)		Land Use (2)	
ITE Land Use Code		ITE Land Use Code	
Daily Trips		Daily Trips	
AM Peak Hour Trips		AM Peak Hour Trips	
Inbound		Inbound	
Outbound		Outbound	
Total		Total	
PM Peak Hour Trips:		PM Peak Hour Trips:	
Inbound		Inbound	
Outbound		Outbound	
Total		Total	

Project Opening Year: 2017 **Build-out Year:**

Study Intersections:
1 Palm Ave at Hallmark Pkwy
2 Palm Ave at I-215 SB Ramps
3 Palm Ave at I-215 NB Ramps
4 Palm Ave at Kendall Dr/Little Leage Dr
5 Hallmark Pkwy at Saratoga Way
6 University Pkwy at Hallmark Pkwy
7 University Pkwy at I-215 SB Ramps
8 University Pkwy at I-215 NB Ramps
9 University Pkwy at Kendall Dr
10 Georgia Blvd at North Driveway
11. Georgia Blvd at South Driveway

(Use Additional Sheet(s) and Map, if necessary)

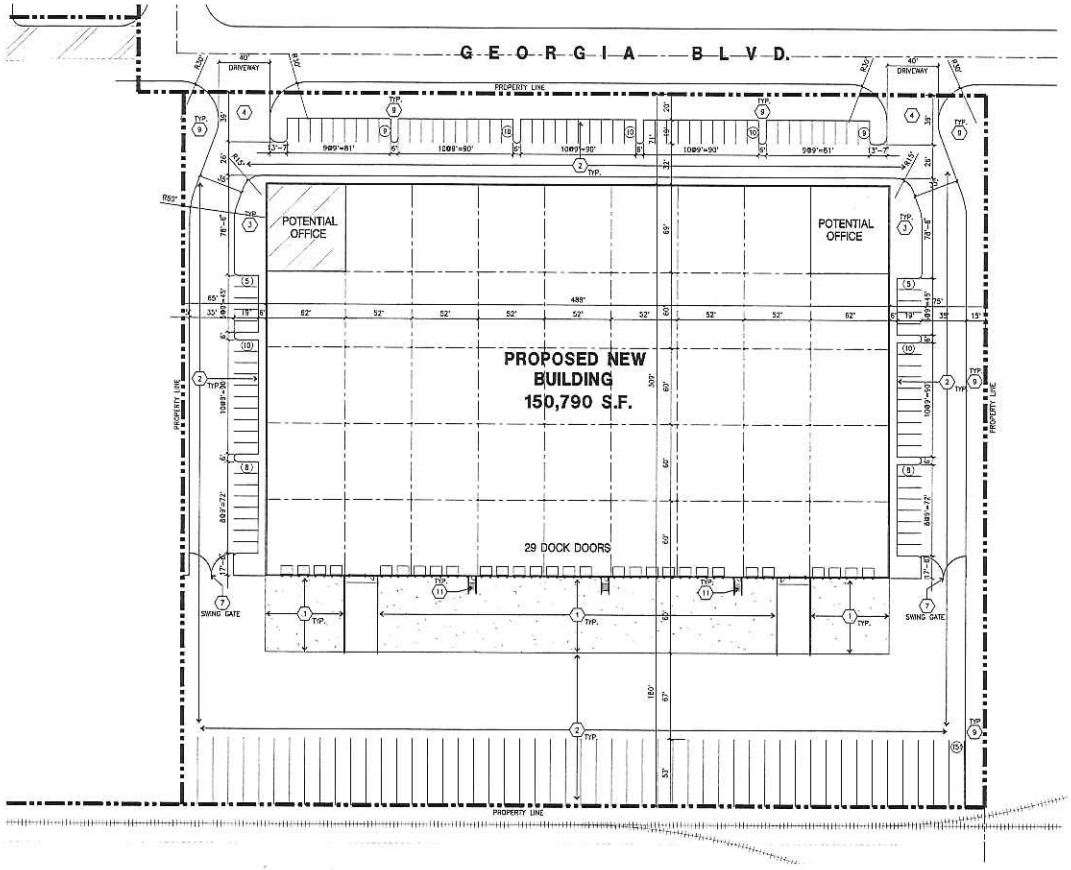
Ambient Growth Rate: 3%/yr %

See Attached) **Trip Distribution:** East % West % North % South %

Preparer's Name: Kimley-Horn and Associates, Inc.
Address: 765 The City Drive #200, Orange, CA 92868
Telephone No. (714) 939-1030 Fax Number:
Email Address: trevor.briggs@kimley-horn.com
Signature: Date: 3/4/16

Approved By (Development Services Department):
Signature: Date: 3/14/16
Name: HERNANDO COTANGCO Title: TRAFFIC ENGINEER

CAUTION: IF THIS SHEET IS NOT 30"X42" IT IS A REDUCED PRINT



OVERALL SITE PLAN (A)
scale: 1" = 40'-0"

SCALE: 1" = 40'-0"
0' 40' 80' 120'
TRUE NORTH

SITE PLAN KEYNOTES

1. HEAVY BROOM FINISH CONC. PAVEMENT.
2. AC PAVING.
3. CONCRETE WALKWAY.
4. DRIVEWAY APRONS TO BE CONSTRUCTED PER CITY STANDARDS.
5. 5'-6"X5'-6"X4" MIN. THICK CONCRETE EXTERIOR LANDING PAD TYP. AT ALL EXTERIOR MAN DOORS TO LANDSCAPED AREAS. FINISH TO BE MEDIUM BROOM FINISH. SLOPE TO BE 1/4" : 12" MAX. PROVIDE WALK TO PUBLIC WAY OR DRIVE WAY W/ 1:20 MAX. AS REQ. BY CITY INSPECTOR.
6. 10' HIGH CONCRETE TILT-UP SCREEN WALL - TO BE TREATED TO MATCH THE ADJACENT BUILDING WALL.
7. PROVIDE METAL, MANUAL OPERATED GATES W/ KNOX-PAD LOCK PER FIRE DEPARTMENT STANDARDS PER DRIVEWAY. GATE TO BE DESIGNED FOR 85 MPH WIND LOAD, EXP. "C". CONTRACTOR TO DESIGN & DETAIL GATES. PROVIDE SHOP DRAWINGS & CALCS. PRIOR TO FABRICATION.
8. TRASH ENCLOSURES PER CITY STANDARDS.
9. LANDSCAPE. LANDSCAPE AREAS INDICATED BY SHADED PATTERN.
10. APPROX. LOCATION OF TRANSFORMER WITH LANDSCAPE AROUND.
11. EXTERIOR CONC. STAIR.
12. BIKE RACK
13. RETAINING WALL

SITE PLAN GENERAL NOTES

1. NOT USED
2. IF SOILS ARE EXPANSIVE IN NATURE, USE STEEL REINFORCING FOR ALL SITE CONCRETE.
3. ALL DIMENSIONS ARE TO THE FACE OF CONCRETE WALL, FACE OF CONCRETE CURB OR GRID LINE U.N.O.
4. SEE "C" PLANS FOR ALL CONCRETE CURBS, GUTTERS AND SWALES. DETAILS ON SHEET A3.1 ARE MINIMUM STANDARDS.
5. THE ENTIRE PROJECT SHALL BE PERMANENTLY MAINTAINED WITH AN AUTOMATIC IRRIGATION SYSTEM, PRIOR TO INSTALLATION & AT LEAST 60 DAYS BEFORE BLDG. COMPLETION.
6. SEE "C" DRAWINGS FOR POINT OF CONNECTIONS TO OFF-SITE UTILITIES. CONTRACTOR SHALL VERIFY ACTUAL UTILITY CONTRACTOR SHALL VERIFY ACTUAL UTILITY LOCATIONS.
7. PROVIDE POSITIVE DRAINAGE AWAY FROM BLDG. SEE "C" DRAWINGS.
8. CONTRACTOR TO REFER TO "C" DRAWINGS FOR ALL HORIZONTAL CONTROL DIMENSIONS. SITE PLANS ARE FOR GUIDANCE AND STARTING LAYOUT POINTS.
9. SEE "C"DRAWINGS FOR FINISH GRADE ELEVATIONS.
10. CONCRETE SIDEWALKS TO BE A MINIMUM OF 4" THICK W/ TOOLED JOINTS AT 5' O.C. EXPANSION/CONSTRUCTION JOINTS SHALL BE A MAXIMUM 12' EA. WAY W/ 1:20 MAX. SLOPE. EXPANSION JOINTS TO HAVE COMPRESSIVE EXPANSION FILLER MATERIAL OF 1/4". SEE "L" DRAWINGS FOR FINISH.
11. NOT USED
12. PAINT CURBS AND PROVIDE SIGNS TO INFORM OF FIRE LANES AS REQUIRED BY FIRE DEPARTMENT.
13. CONSTRUCTION DOCUMENTS PERTAINING TO THE LANDSCAPE AND IRRIGATION OF THE ENTIRE PROJECT SITE SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND APPROVED BY PUBLIC FACILITIES DEVELOPMENT PRIOR TO ISSUANCE OF BUILDING PERMITS.
14. PRIOR TO FINAL CITY INSPECTION, THE LANDSCAPE ARCHITECT SHALL SUBMIT A CERTIFICATE OF COMPLETION TO PUBLIC FACILITIES DEVELOPMENT.
15. NOT USED
16. ALL LANDSCAPE AND IRRIGATION DESIGNS SHALL MEET CURRENT CITY STANDARDS AS LISTED IN GUIDELINES OR AS OBTAINED FROM PUBLIC FACILITIES DEVELOPMENT.
17. NOT USED.
18. LANDSCAPED AREAS SHALL BE DELINEATED WITH A MINIMUM SIX INCHES (6") HIGH CURB
19. APPROVED CONCEPTUAL LANDSCAPE PLAN PRIOR TO GRADING PERMIT

SITE LEGEND

- LANDSCAPED AREA
- CONCRETE PAVING
- STANDARD PARKING STALL (9' X 19')
- FUEL EFFICIENT CLEAN AIR VEHICLE (9' X 19')
- AC PAVING
- HANDICAP PARKING STALL (8' X 19')
- PATH OF TRAVEL

PROJECT INFORMATION

Owner
INDUSTRIAL PROPERTY TRUST
4675 MACARTHUR COURT
SUITE 625
NEWPORT BEACH, CA. 92660
TEL: (949) 862-4900
CONTACT: PETER VANDERBURG

Applicant
HPA
18831 BARDEEN AVE, STE. #100
IRVINE, CA 92612
TEL: (949) 863-1770
CONTACT: JASIE CRUZ

Civil

TEL: ---
CONTACT: ---

Landscape

TEL: ---
CONTACT: ---

Assessors Parcel Number
APN:

Zoning
LIGHT INDUSTRIAL (IL)

General Plan Designation
INDUSTRIAL

Legal Description

Construction
BUILDING OCCUPANCY B/S-1
BUILDING TYPE II-B
FIRE SPRINKLERS YES, ESFR SYSTEM

TABULATION

	PROPOSED NEW BLDG.
SITE AREA	
in s.f.	351,950 s.f.
in acres	8.1 ac
BUILDING AREA	
Office	3,000 s.f.
Warehouse	147,790 s.f.
TOTAL	150,790 s.f.
COVERAGE	42.9%
AUTO PARKING REQUIRED	
11,250 s.f.	121 stalls
AUTO PARKING PROVIDED	
Auto (9'x 19')	94 stalls
Trailer (10'x 55')	51 stalls
Dock-door	29 stalls
Grade-level door	7 stalls
TOTAL	179 stalls
MAXIMUM BUILDING HEIGHT ALLOWED	
Height - 2 stories / 50'	
MAXIMUM FLOOR AREA RATIO	
FAR - 0.75	
ZONING ORDINANCE FOR CITY	
Zoning Designation - I (Industrial)	
LANDSCAPE REQUIREMENT	
Surface parking area	44,124 s.f.
15% of surface parking area	6,619 s.f.
LANDSCAPE PROVIDED	
in s.f.	33,819 s.f.
SETBACKS	
Front - 25'	
Interior side - 0'	
Side setback- 10', Major highw ay / Arterial St.- 20'	
Rear setback - 10'	

VICINITY MAP

HPA architecture
hpa, inc.
18831 bardeen avenue, - ste. #100
irvine, ca
92612
tel: 949-863-1770
fax: 949-863-0851
email: hpa@hpaarchs.com

Owner:

INDUSTRIAL PROPERTY TRUST
4675 Mac Arthur Court
Suite 625
Newport Beach, CA. 92660
Ph: (949) 862-4900

Project:

150K DISTRIBUTION CENTER

Georgia Blvd.
City of San Bernardino, CA 92407

Consultants:

CIVIL --

LANDSCAPE --

Title: overall site plan

Project Number: 15443
Drawn by: JEC
Date: 01/25/16
Revision:

Sheet:

A1.1

TABLE A
SUMMARY OF PROJECT TRIP GENERATION
I-215 DISTRIBUTION CENTER II

TRIP GENERATION RATES

ITE Land Use	ITE Code	Unit	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Warehousing	150	KSF	3.560	0.237	0.063	0.300	0.080	0.240	0.320

PROJECT TRIP GENERATION

Project Land Use		Quantity	Unit	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Warehousing		150.790	KSF	537	36	9	45	12	36	48
Passenger Vehicles	80.30%			431	29	7	36	10	29	39
Trucks	19.70%			106	7	2	9	2	7	9

PROJECT TRIPS - PASSENGER CAR EQUIVALENTS (PCE)

Vehicle Type	Vehicle Mix [1]	Daily Vehicles	PCE Factor	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Passenger Vehicles	80.3%	431	1.0	431	29	7	36	10	29	39
2-Axle Trucks	5.2%	28	1.5	42	3	1	4	1	3	4
3-Axle Trucks	4.5%	24	2.0	48	3	1	4	1	3	4
4+ Axle Trucks	10.0%	54	3.0	162	11	3	14	4	11	15
Total Truck PCE Trips				252	17	5	22	6	17	23
Total Project PCE Trips				**683**	**46**	**12**	**58**	**16**	**46**	**62**

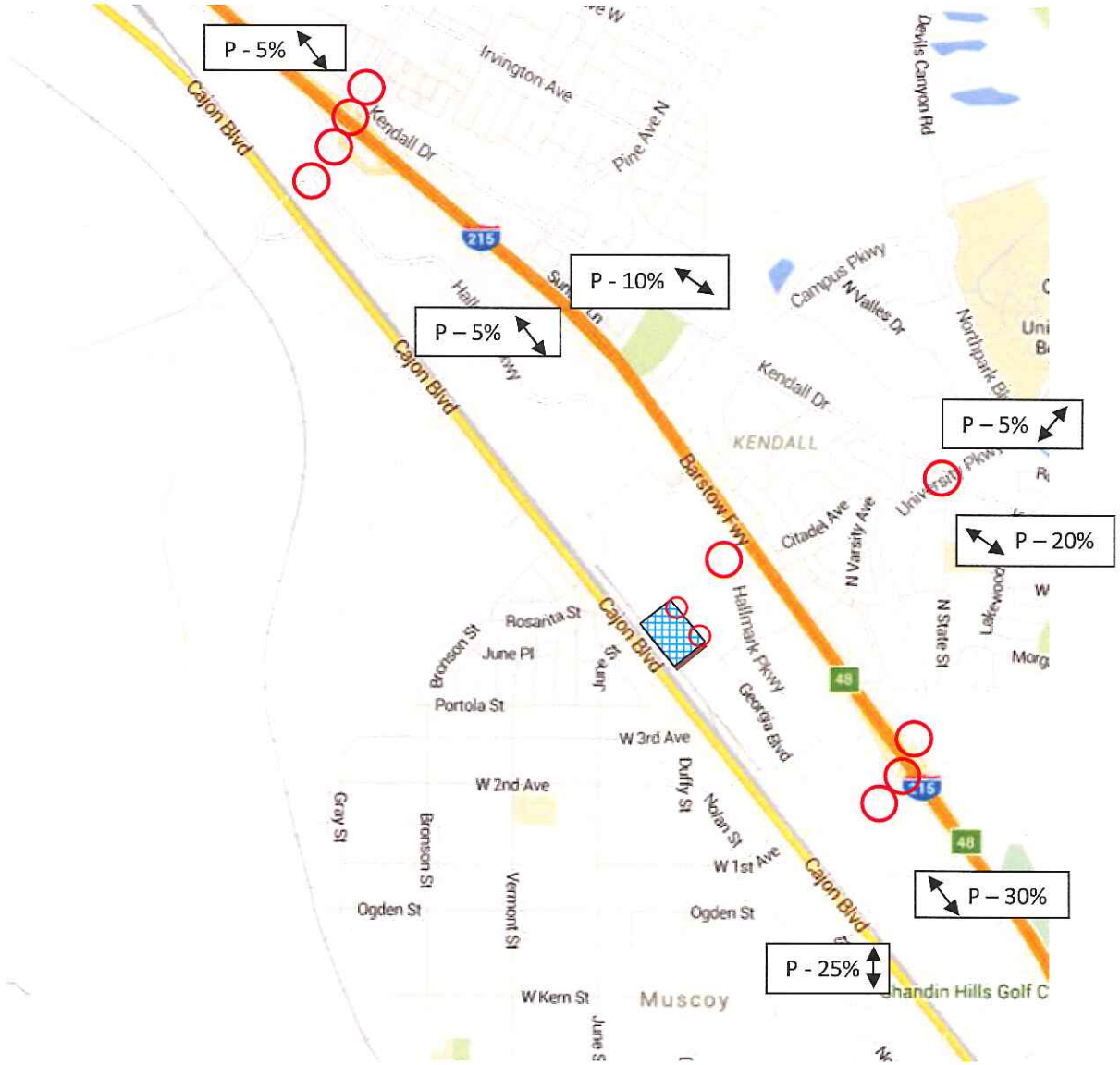
Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition

PCE = Passenger Car Equivalent

KSF = Thousand Square Feet

[1] Source: Truck Trip Generation Study - City of Fontana, August 2003.

IPT I-215 DISTRIBUTION CENTER II – TRIP DISTRIBUTION – PASSENGER CARS



PROJECT SITE

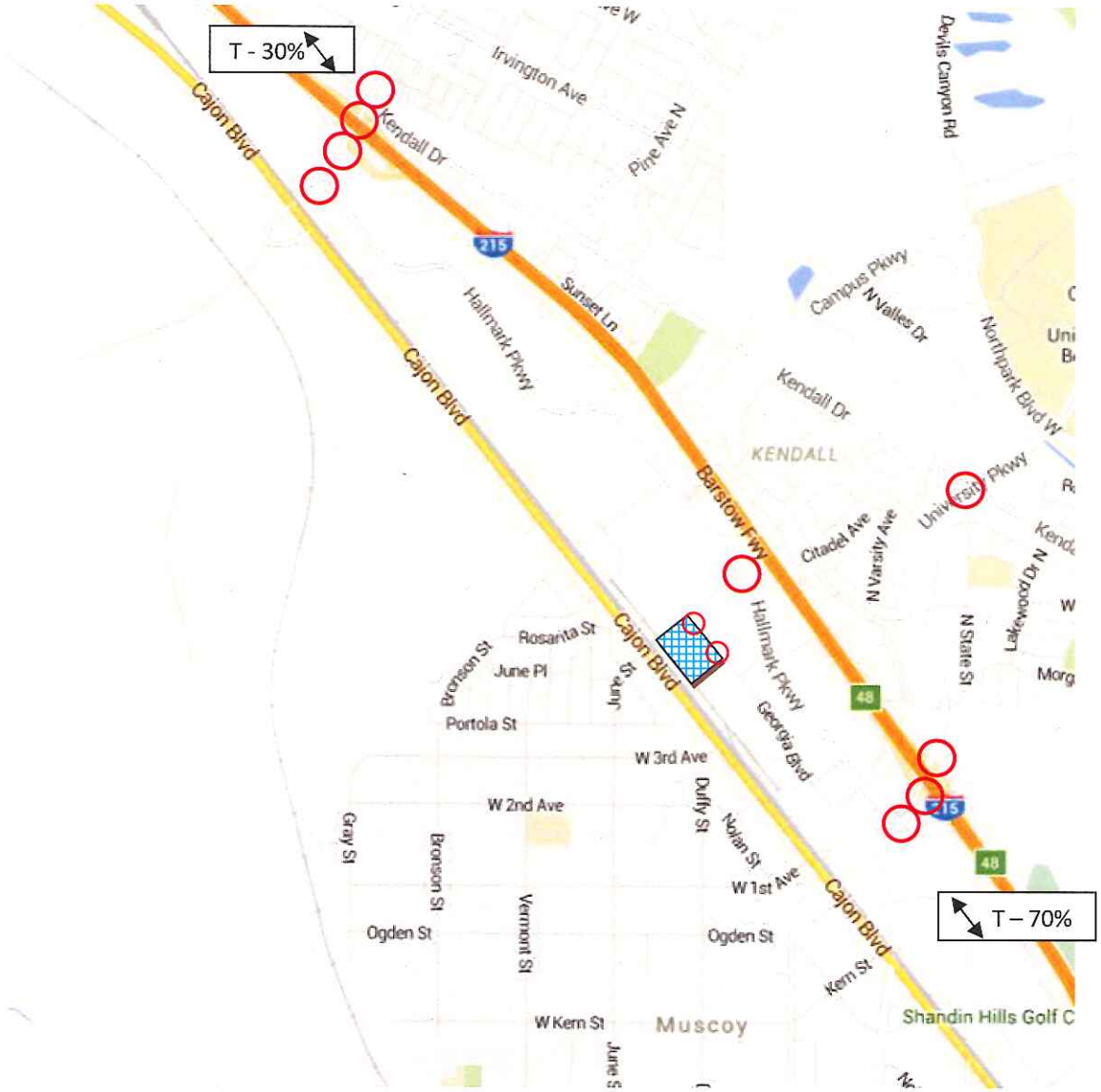
STUDY INTERSECTION

SITE ACCESS

P - XX% **PASSENGER CAR DISTRIBUTION**

Attachment

IPT I-215 DISTRIBUTION CENTER II – TRIP DISTRIBUTION – TRUCKS



PROJECT SITE

STUDY INTERSECTION

SITE ACCESS

T - XX% **TRUCK DISTRIBUTION**

3/4/2016 12:13 PM

Kimley-Horn and Associates, Inc.

APPENDIX **B**

TRAFFIC COUNT DATA SHEETS

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-001 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

AM

NS/EW Streets:	Hallmark Pkwy			Hallmark Pkwy			Palm Ave			Palm Ave				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	1	0	1	1	1	1	1	1					
7:00 AM	0	1	8	1	0	0	3	26	1	15	72	0	127	0	0	0	0
7:15 AM	0	0	7	0	0	2	3	40	0	17	78	0	147	0	0	0	1
7:30 AM	1	2	6	0	2	0	3	37	0	29	79	1	160	0	0	0	0
7:45 AM	1	1	3	2	1	0	0	20	0	23	43	0	94	0	0	0	0
8:00 AM	0	0	8	1	0	0	0	22	0	18	20	0	69	0	0	0	0
8:15 AM	1	1	16	1	0	0	2	23	1	19	30	0	94	0	0	0	0
8:30 AM	0	0	16	0	0	1	2	27	3	17	32	1	99	0	0	0	0
8:45 AM	1	2	11	0	0	0	3	25	1	27	47	0	117	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	4	7	75	5	3	3	16	220	6	165	401	2	907	0	0	0	1
APPROACH %'s :	4.65%	8.14%	87.21%	45.45%	27.27%	27.27%	6.61%	90.91%	2.48%	29.05%	70.60%	0.35%					

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	2	4	24	3	3	2	9	123	1	84	272	1	528
PEAK HR FACTOR :		0.833			0.667			0.773			0.819		0.825

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-001 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

PM

NS/EW Streets:	Hallmark Pkwy			Hallmark Pkwy			Palm Ave			Palm Ave				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	1	0	1	1	1	1	1	1					
4:00 PM	0	2	45	0	1	1	0	39	4	15	20	2	129	0	0	0	0
4:15 PM	0	1	37	0	1	0	0	66	1	17	28	0	151	0	0	0	0
4:30 PM	2	0	39	0	0	0	1	49	2	23	18	0	134	0	0	0	0
4:45 PM	3	0	25	0	1	0	0	47	2	16	21	0	115	0	0	0	0
5:00 PM	1	1	26	1	0	0	0	54	0	5	21	1	110	0	0	0	0
5:15 PM	0	3	33	0	0	0	0	18	1	20	29	2	106	0	0	0	0
5:30 PM	6	5	64	0	0	0	0	52	1	11	25	0	164	0	0	0	0
5:45 PM	0	0	28	0	0	1	0	33	0	16	18	1	97	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	12	12	297	1	3	2	1	358	11	123	180	6	1006	0	0	0	0
APPROACH %'s :	3.74%	3.74%	92.52%	16.67%	50.00%	33.33%	0.27%	96.76%	2.97%	39.81%	58.25%	1.94%					

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	5	3	146	0	3	1	1	201	9	71	87	2	529
PEAK HR FACTOR :		0.819			0.500			0.787			0.889		0.876

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Hallmark Pkwy and Palm Ave , San Bernardino

Date: 3/15/2016

Day: Tuesday

Project #: 16-6034-001

City: San Bernardino

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

Southbound Approach (Hallmark Pkwy)

Lanes	0	1	0		
AM	2	3	3	14	AM
NOON	0	0	0	0	NOON
PM	1	3	0	6	PM

Eastbound Approach (Palm Ave)

	AM	NOON	PM
	276	0	93
1	9	0	1
1	123	0	201
1	1	0	9
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
1	0	2	1
272	0	87	1
84	0	71	1
150	0	347	
AM	NOON	PM	

CONTROL

4-Way Stop

Northbound Approach

AM	88	2	4	24	AM
NOON	0	0	0	0	NOON
PM	83	5	3	146	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	
AM	8	14
NOON	0	0
PM	4	6

	AM	NOON	PM
West Leg	276	0	93
	133	0	211
East Leg	357	0	160
	150	0	347

	South Leg	
AM	88	30
NOON	0	0
PM	83	154

Total Volume Per Leg

	North Leg
AM	22
NOON	0
PM	10

	AM	NOON	PM
West Leg	409	0	304
East Leg	507	0	507

	South Leg
AM	118
NOON	0
PM	237

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-002 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

AM

NS/EW Streets:	I-215 SB Ramps			I-215 SB Ramps			Palm Ave			Palm Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0.3	0.3	0.3	0	1	0	1	1.5	0.5	1	2	0	
7:00 AM	20	0	40	6	7	3	10	18	8	172	72	14	370
7:15 AM	27	0	52	10	21	6	8	35	11	163	74	24	431
7:30 AM	23	1	60	6	28	14	5	41	19	222	78	21	518
7:45 AM	17	0	126	11	14	5	1	14	9	166	52	14	429
8:00 AM	10	2	110	4	9	3	5	16	9	109	29	8	314
8:15 AM	14	0	76	9	9	3	3	35	5	112	30	9	305
8:30 AM	10	2	45	7	15	5	6	34	11	131	41	9	316
8:45 AM	12	2	54	6	15	11	4	21	13	107	61	18	324
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	133	7	563	59	118	50	42	214	85	1182	437	117	3007
APPROACH %'s :	18.92%	1.00%	80.09%	25.99%	51.98%	22.03%	12.32%	62.76%	24.93%	68.09%	25.17%	6.74%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	87	1	278	33	70	28	24	108	47	723	276	73	1748
PEAK HR FACTOR :		0.640			0.682			0.688			0.835		0.844

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-002 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

PM

NS/EW Streets:	I-215 SB Ramps			I-215 SB Ramps			Palm Ave			Palm Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0.3	0.3	0.3	0	1	0	1	1.5	0.5	1	2	0	
4:00 PM	6	2	54	7	10	4	2	71	26	88	28	16	314
4:15 PM	5	1	63	13	8	7	8	59	43	69	38	23	337
4:30 PM	5	1	56	11	19	5	5	52	37	74	32	16	313
4:45 PM	7	2	58	11	15	4	0	40	23	86	26	28	300
5:00 PM	4	1	51	5	14	4	4	56	21	90	23	13	286
5:15 PM	4	2	65	17	11	3	8	37	11	86	43	20	307
5:30 PM	9	0	67	7	7	2	18	68	14	77	32	21	322
5:45 PM	6	2	66	6	9	1	6	59	18	88	26	22	309
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	46	11	480	77	93	30	51	442	193	658	248	159	2488
APPROACH %'s :	8.57%	2.05%	89.39%	38.50%	46.50%	15.00%	7.43%	64.43%	28.13%	61.78%	23.29%	14.93%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	23	6	231	42	52	20	15	222	129	317	124	83	1264
PEAK HR FACTOR :		0.942			0.814			0.832			0.936		0.938

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

I-215 SB Ramps and Palm Ave , San Bernardino

Date: 3/15/2016

Day: Tuesday

Project #: 16-6034-002

City: San Bernardino

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

Southbound Approach (I-215 SB Ramps)

	Lanes 0	1	0		
AM	28	70	33	98	AM
NOON	0	0	0	0	NOON
PM	20	52	42	104	PM

Eastbound Approach (Palm Ave)

	AM	NOON	PM
	391	0	167
1	24	0	15
1.5	108	0	222
0.5	47	0	129
Lanes	AM	NOON	PM

Westbound Approach

	AM	NOON	PM	Lanes
	73	0	83	0
	276	0	124	2
	723	0	317	1
	419	0	495	
	AM	NOON	PM	

CONTROL

Signalized

Northbound Approach

AM	840	87	1	278	AM
NOON	0	0	0	0	NOON
PM	498	23	6	231	PM
		0.3	0.3	0.3	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		
131	98	AM
0	0	NOON
114	104	PM

West Leg (AM / NOON / PM)		
391	0	167
179	0	366

East Leg (AM / NOON / PM)		
1072	0	524
419	0	495

South Leg		
840	366	AM
0	0	NOON
498	260	PM

Total Volume Per Leg

North Leg	
229	AM
0	NOON
218	PM

West Leg (AM / NOON / PM)		
570	0	533

East Leg (AM / NOON / PM)		
1491	0	1019

South Leg	
1206	AM
0	NOON
758	PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-003 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

AM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Palm Ave			Palm Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0.5	0.5	1	0	0	0	0.5	1.5	0	0	2	0	
7:00 AM	46	0	81	0	0	0	5	60	0	0	217	79	488
7:15 AM	41	0	130	0	0	0	8	89	0	0	233	98	599
7:30 AM	34	0	94	0	0	0	8	99	0	0	280	93	608
7:45 AM	31	1	80	0	0	0	8	142	0	0	191	61	514
8:00 AM	15	0	59	0	0	0	6	128	0	0	129	60	397
8:15 AM	18	1	76	0	0	0	11	116	0	0	132	70	424
8:30 AM	28	0	81	0	0	0	8	78	0	0	163	60	418
8:45 AM	34	1	61	0	0	0	7	74	0	0	151	53	381
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	247	3	662	0	0	0	61	786	0	0	1496	574	3829
APPROACH %'s :	27.08%	0.33%	72.59%	#DIV/0!	#DIV/0!	#DIV/0!	7.20%	92.80%	0.00%	0.00%	72.27%	27.73%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	152	1	385	0	0	0	29	390	0	0	921	331	2209
PEAK HR FACTOR :		0.787			0.000			0.698			0.839		0.908

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: 16-6034-003 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

PM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			Palm Ave			Palm Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0.5	0.5	1	0	0	0	0.5	1.5	0	0	2	0					
4:00 PM	27	0	119	0	0	0	25	104	0	0	110	98	483				
4:15 PM	27	1	131	0	0	0	31	104	0	0	99	70	463				
4:30 PM	26	0	113	0	0	0	20	101	0	0	98	78	436				
4:45 PM	30	1	153	0	0	0	16	93	0	0	110	60	463				
5:00 PM	15	1	148	0	0	0	19	90	0	0	113	87	473				
5:15 PM	27	1	116	0	0	0	8	113	0	0	121	101	487				
5:30 PM	31	0	134	0	0	0	18	125	0	0	104	102	514				
5:45 PM	29	1	154	0	0	0	15	113	0	0	100	86	498				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	212	5	1068	0	0	0	152	843	0	0	855	682	3817	0	0	0	0
APPROACH %'s :	16.50%	0.39%	83.11%	#DIV/0!	#DIV/0!	#DIV/0!	15.28%	84.72%	0.00%	0.00%	55.63%	44.37%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	102	3	552	0	0	0	60	441	0	0	438	376	1972
PEAK HR FACTOR :		0.893			0.000			0.876			0.917		0.959

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

I-215 NB Ramps and Palm Ave , San Bernardino

Date: 3/15/2016

Day: Tuesday

Project #: 16-6034-003

City: San Bernardino

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (I-215 NB Ramps)

	Lanes 0	Lanes 0	Lanes 0		
AM	0	0	0	361	AM
NOON	0	0	0	0	NOON
PM	0	0	0	439	PM

Eastbound Approach (Palm Ave)

	AM	NOON	PM
	1073	0	540
0.5	29	0	60
1.5	390	0	441
0	0	0	0
Lanes	AM	NOON	PM

Westbound Approach

	AM	NOON	PM	Lanes
	331	0	376	0
	921	0	438	2
	0	0	0	0
	775	0	993	
	AM	NOON	PM	

CONTROL

Signalized

Northbound Approach

AM	0	152	1	385	AM
NOON	0	0	0	0	NOON
PM	0	102	3	552	PM
		0.5	0.5	1	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

	AM	NOON	PM
North Leg	0	0	0
	361	0	439
West Leg	1073	0	540
	419	0	501
East Leg	1252	0	814
	775	0	993
South Leg	0	0	0
	538	0	657

Total Volume Per Leg

	AM	NOON	PM
North Leg	361	0	439
West Leg	1492	0	1041
East Leg	2027	0	1807
South Leg	538	0	657

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-004 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

AM

NS/EW Streets:	Kendall Dr/LittleLeague Dr			Kendall Dr/LittleLeague Dr			Palm Ave			Palm Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	1	1	1	1	1	1	2	1	1	2	0	
7:00 AM	85	21	21	2	16	43	33	69	42	36	156	18	542
7:15 AM	84	29	58	3	14	41	28	125	59	27	207	16	691
7:30 AM	96	29	56	9	21	41	35	92	65	48	234	22	748
7:45 AM	58	18	19	11	24	35	25	57	145	30	160	15	597
8:00 AM	63	18	17	9	18	28	28	39	119	25	108	12	484
8:15 AM	57	28	33	11	15	38	30	68	88	21	103	18	510
8:30 AM	64	27	39	11	24	39	23	78	58	43	120	25	551
8:45 AM	47	19	25	13	33	36	36	42	57	39	117	18	482
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	554	189	268	69	165	301	238	570	633	269	1205	144	4605
APPROACH %'s :	54.80%	18.69%	26.51%	12.90%	30.84%	56.26%	16.52%	39.56%	43.93%	16.63%	74.47%	8.90%	

UTURNS			
NB	SB	EB	WB
0	0	0	0

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	323	97	154	25	75	160	121	343	311	141	757	71	2578
PEAK HR FACTOR :		0.793			0.915			0.854			0.797		0.862

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-004 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

PM

NS/EW Streets:	Kendall Dr/LittleLeague Dr			Kendall Dr/LittleLeague Dr			Palm Ave			Palm Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	2	1	1	1	1	1	1	2	1	1	2	0					
4:00 PM	100	19	27	10	13	45	26	115	75	20	71	14	535				
4:15 PM	84	19	36	12	15	28	34	115	84	25	50	8	510				
4:30 PM	79	13	31	11	16	25	25	121	73	31	77	10	512				
4:45 PM	76	14	37	8	16	26	34	124	85	28	64	10	522				
5:00 PM	94	26	43	7	16	24	36	135	74	27	78	3	563				
5:15 PM	115	18	32	9	10	41	48	100	84	13	59	10	539				
5:30 PM	99	39	41	18	20	38	47	119	86	35	68	11	621				
5:45 PM	112	27	41	11	18	22	52	122	88	17	55	10	575				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	759	175	288	86	124	249	302	951	649	196	522	76	4377	0	0	0	0
APPROACH %'s :	62.11%	14.32%	23.57%	18.74%	27.02%	54.25%	15.88%	50.00%	34.12%	24.69%	65.74%	9.57%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	420	110	157	45	64	125	183	476	332	92	260	34	2298
PEAK HR FACTOR :		0.954			0.770			0.946			0.846		0.925

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Kendall Dr/LittleLeague Dr and Palm Ave , San Bernardino

Date: 3/15/2016

Day: Tuesday

Project #: 16-6034-004

City: San Bernardino

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach

Kendall Dr/LittleLeague Dr

	Lanes 1	1	1		
AM	160	75	25	289	AM
NOON	0	0	0	0	NOON
PM	125	64	45	327	PM

Eastbound Approach

Palm Ave

	AM	NOON	PM
	1240	0	805
1	121	0	183
2	343	0	476
1	311	0	332
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
71	0	34	0
757	0	260	2
141	0	92	1
522	0	678	
AM	NOON	PM	

Northbound Approach

AM	527	323	97	154	AM
NOON	0	0	0	0	NOON
PM	488	420	110	157	PM
		2	1	1	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		
AM	260	289	AM
NOON	0	0	NOON
PM	234	327	PM

West Leg			East Leg		
AM	NOON	PM			
1240	0	805	969	0	386
775	0	991	522	0	678
			AM	NOON	PM

	South Leg	
AM	527	574
NOON	0	0
PM	488	687

Total Volume Per Leg

	North Leg
AM	549
NOON	0
PM	561

West Leg			East Leg		
AM	NOON	PM			
2015	0	1796	1491	0	1064
			AM	NOON	PM

	South Leg
AM	1101
NOON	0
PM	1175

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-005 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

AM

NS/EW Streets:	Hallmark Pkwy			Hallmark Pkwy			Saratoga Wy			Saratoga Wy				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	0	1	0	0	1	0					
7:00 AM	1	47	1	0	19	1	0	0	2	0	0	0	71				
7:15 AM	5	44	2	0	21	1	0	0	1	1	0	0	75				
7:30 AM	6	46	5	0	25	0	0	1	3	0	0	0	86				
7:45 AM	3	55	6	1	28	2	0	0	2	0	0	0	97				
8:00 AM	3	44	3	0	30	0	0	0	3	0	0	0	83				
8:15 AM	4	46	1	1	22	0	0	0	2	1	0	0	77				
8:30 AM	2	43	0	0	42	2	0	0	2	1	0	0	92				
8:45 AM	4	40	0	0	42	0	0	0	8	0	0	0	94				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	28	365	18	2	229	6	0	1	23	3	0	0	675	0	0	0	0
APPROACH %'s :	6.81%	88.81%	4.38%	0.84%	96.62%	2.53%	0.00%	4.17%	95.83%	100.00%	0.00%	0.00%					

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	12	188	10	2	122	4	0	0	9	2	0	0	349
PEAK HR FACTOR :		0.820			0.727			0.750			0.500		0.899

CONTROL : 2-Way Stop (EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-005 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

PM

NS/EW Streets:	Hallmark Pkwy			Hallmark Pkwy			Saratoga Wy			Saratoga Wy				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	0	1	0	0	1	0					
4:00 PM	12	38	0	0	82	1	3	0	11	1	0	0	148				
4:15 PM	6	48	0	0	63	2	2	0	21	4	0	0	146				
4:30 PM	10	45	0	0	92	1	3	0	15	3	0	0	169				
4:45 PM	3	47	0	0	53	4	2	0	11	1	0	0	121				
5:00 PM	7	29	1	0	55	0	1	0	12	1	0	0	106				
5:15 PM	4	54	1	0	46	1	2	0	6	0	1	0	115				
5:30 PM	5	89	0	0	47	0	1	0	4	1	0	0	147				
5:45 PM	2	47	0	0	41	1	0	0	9	0	0	0	100				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	49	397	2	0	479	10	14	0	89	11	1	0	1052	0	0	0	0
APPROACH %'s :	10.94%	88.62%	0.45%	0.00%	97.96%	2.04%	13.59%	0.00%	86.41%	91.67%	8.33%	0.00%					

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	31	178	0	0	290	8	10	0	58	9	0	0	584
PEAK HR FACTOR :		0.950			0.801			0.739			0.563		0.864

CONTROL : 2-Way Stop (EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Hallmark Pkwy and Saratoga Wy , San Bernardino

Date: 3/15/2016

Day: Tuesday

Project #: 16-6034-005

City: San Bernardino

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

Southbound Approach (Hallmark Pkwy)

	Lanes 0	2	0		
AM	4	122	2	188	AM
NOON	0	0	0	0	NOON
PM	8	290	0	188	PM

Eastbound Approach (Saratoga Wy)

Lanes	AM	NOON	PM
	16	0	39
0	0	0	10
1	0	0	0
0	9	0	58

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	0	0	1
2	0	9	0
12	0	0	

Northbound Approach

AM	133	12	188	10	AM
NOON	0	0	0	0	NOON
PM	357	31	178	0	PM
		0	2	0	Lanes

CONTROL

2-Way Stop (EB/WB)

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		
	128	188	AM
	0	0	NOON
	298	188	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
16	0	39	2	0	9
9	0	68	12	0	0

	South Leg	
AM	133	210
NOON	0	0
PM	357	209

Total Volume Per Leg

	North Leg
AM	316
NOON	0
PM	486

West Leg AM	NOON	PM	East Leg AM	NOON	PM
25	0	107	14	0	9

	South Leg
AM	343
NOON	0
PM	566

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-006 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

AM

NS/EW Streets:	Hallmark Pkwy			Hallmark Pkwy			University Pkwy			University Pkwy				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	1	0	1.5	0.5	1	1	2	0	1	2	1					
7:00 AM	1	0	1	36	0	15	15	102	2	4	54	64	294	0	0	3	1
7:15 AM	4	2	10	55	3	9	24	101	1	6	79	65	359	0	0	8	0
7:30 AM	0	1	5	48	2	11	22	113	2	2	99	83	388	0	0	4	1
7:45 AM	0	0	5	57	0	7	14	106	0	4	101	88	382	0	0	4	1
8:00 AM	0	0	3	51	1	10	19	99	1	5	68	63	320	0	0	5	0
8:15 AM	1	0	6	50	0	11	23	91	3	3	82	67	337	0	0	6	0
8:30 AM	4	2	3	52	1	14	26	84	0	3	78	67	334	0	0	4	0
8:45 AM	2	0	6	56	1	18	20	89	2	11	87	86	378	0	0	4	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	12	5	39	405	8	95	163	785	11	38	648	583	2792	0	0	38	3
APPROACH %'s :	21.43%	8.93%	69.64%	79.72%	1.57%	18.70%	17.00%	81.86%	1.15%	2.99%	51.06%	45.94%					

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	4	3	23	211	6	37	79	419	4	17	347	299	1449
PEAK HR FACTOR :		0.469			0.948			0.916			0.859		0.934

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-006 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

PM

NS/EW Streets:	Hallmark Pkwy			Hallmark Pkwy			University Pkwy			University Pkwy				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	1	0	1.5	0.5	1	1	2	0	1	2	1					
4:00 PM	2	4	9	139	6	35	33	105	2	15	128	78	556	0	0	1	1
4:15 PM	0	2	8	134	1	42	38	95	2	8	100	85	515	0	0	3	0
4:30 PM	4	2	9	143	4	62	40	95	2	6	107	95	569	0	0	0	0
4:45 PM	4	4	13	120	3	42	31	81	5	11	105	93	512	0	0	2	0
5:00 PM	4	2	18	115	2	27	34	110	2	19	102	89	524	0	0	2	1
5:15 PM	4	3	10	104	3	31	34	87	3	13	92	106	490	0	0	4	2
5:30 PM	3	3	9	118	8	39	28	116	3	11	98	122	558	0	0	2	0
5:45 PM	3	5	11	102	2	26	42	104	1	18	118	69	501	0	0	4	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	24	25	87	975	29	304	280	793	20	101	850	737	4225	0	0	18	6
APPROACH %'s :	17.65%	18.38%	63.97%	74.54%	2.22%	23.24%	25.62%	72.55%	1.83%	5.98%	50.36%	43.66%					

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	10	12	39	536	14	181	142	376	11	40	440	351	2152
PEAK HR FACTOR :		0.726			0.874			0.945			0.940		0.946

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Hallmark Pkwy and University Pkwy , San Bernardino

Date: 3/15/2016

Day: Tuesday

Project #: 16-6034-006

City: San Bernardino

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

Southbound Approach

Hallmark Pkwy

Lanes	1	0.5	1.5		
AM	37	6	211	381	AM
NOON	0	0	0	0	NOON
PM	181	14	536	505	PM

Eastbound Approach

University Pkwy

Lanes	AM	NOON	PM
	388	0	631
1	79	0	142
2	419	0	376
0	4	0	11

CONTROL

Signalized

Westbound Approach

AM	NOON	PM	Lanes
299	0	351	1
347	0	440	2
17	0	40	1
653	0	951	

Northbound Approach

AM	27	4	3	23	AM
NOON	0	0	0	0	NOON
PM	65	10	12	39	PM
Lanes		1	1	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		
254	381	AM
0	0	NOON
731	505	PM

West Leg			East Leg		
AM	NOON	PM			
388	0	631	663	0	831
502	0	529	653	0	951
			AM	NOON	PM

South Leg		
27	30	AM
0	0	NOON
65	61	PM

Total Volume Per Leg

North Leg		
635		AM
0		NOON
1236		PM

West Leg			East Leg		
AM	NOON	PM			
890	0	1160	1316	0	1782
			AM	NOON	PM

South Leg		
57		AM
0		NOON
126		PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-007 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

AM

NS/EW Streets:	I-215 SB Ramps			I-215 SB Ramps			University Pkwy			University Pkwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0.5	0.5	1	0	2	0	2	1	0	
7:00 AM	0	0	0	7	2	20	0	65	73	250	109	0	526
7:15 AM	0	0	0	14	1	14	0	103	72	279	151	0	634
7:30 AM	0	0	0	20	0	20	0	100	76	278	175	0	669
7:45 AM	0	0	0	19	1	18	0	106	70	260	179	0	653
8:00 AM	0	0	0	20	2	22	0	77	76	201	120	0	518
8:15 AM	0	0	0	13	2	14	0	85	67	197	152	0	530
8:30 AM	0	0	0	13	0	15	0	73	65	200	137	0	503
8:45 AM	0	0	0	12	1	19	0	80	79	210	178	0	579
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	118	9	142	0	689	578	1875	1201	0	4612
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	43.87%	3.35%	52.79%	0.00%	54.38%	45.62%	60.96%	39.04%	0.00%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	0	0	60	4	72	0	374	291	1067	614	0	2482
PEAK HR FACTOR :		0.000			0.850			0.945			0.928		0.928

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-007 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

PM

NS/EW Streets:	I-215 SB Ramps			I-215 SB Ramps			University Pkwy			University Pkwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0.5	0.5	1	0	2	0	2	1	0	
4:00 PM	0	0	0	15	2	14	0	130	132	345	197	0	835
4:15 PM	0	0	0	16	0	14	0	142	115	259	195	0	741
4:30 PM	0	0	0	19	1	14	0	109	126	274	203	0	746
4:45 PM	0	0	0	15	1	8	0	118	112	227	202	0	683
5:00 PM	0	0	0	20	2	21	0	142	91	286	194	0	756
5:15 PM	0	0	0	13	1	11	0	135	92	300	209	0	761
5:30 PM	0	0	0	18	0	19	0	147	93	304	232	0	813
5:45 PM	0	0	0	20	0	14	0	140	87	313	194	0	768
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	136	7	115	0	1063	848	2308	1626	0	6103
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	52.71%	2.71%	44.57%	0.00%	55.63%	44.37%	58.67%	41.33%	0.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	71	3	65	0	564	363	1203	829	0	3098
PEAK HR FACTOR :		0.000			0.808			0.966			0.948		0.953

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

I-215 SB Ramps and University Pkwy , San Bernardino

Date:	3/15/2016
Day:	Tuesday

Project #:	16-6034-007
City:	San Bernardino

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach

I-215 SB Ramps

Lanes	1	0.5	0.5		
AM	72	4	60	0	AM
NOON	0	0	0	0	NOON
PM	65	3	71	0	PM

Eastbound Approach

University Pkwy

	AM	NOON	PM
	686	0	894
0	0	0	0
2	374	0	564
0	291	0	363
Lanes	AM	NOON	PM

CONTROL

Signalized

Westbound Approach

	AM	NOON	PM	Lanes
	0	0	0	0
	614	0	829	1
	1067	0	1203	2
	434	0	635	
	AM	NOON	PM	

Northbound Approach

AM	1362	0	0	0	AM
NOON	0	0	0	0	NOON
PM	1569	0	0	0	PM
		0	0	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		
136	0	AM
0	0	NOON
139	0	PM

West Leg			East Leg		
AM	NOON	PM			
686	0	894	1681	0	2032
665	0	927	434	0	635
			AM	NOON	PM

South Leg		
1362	0	AM
0	0	NOON
1569	0	PM

Total Volume Per Leg

North Leg
136 AM
0 NOON
139 PM

West Leg			East Leg		
AM	NOON	PM			
1351	0	1821	2115	0	2667
			AM	NOON	PM

South Leg
1362 AM
0 NOON
1569 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-008 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

AM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			University Pkwy			University Pkwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0.5	0.5	2	0	0	0	1	2	0	0	3	1	
7:00 AM	60	0	201	0	0	0	4	68	0	0	304	22	659
7:15 AM	75	0	292	0	0	0	11	103	0	0	350	27	858
7:30 AM	79	2	464	0	0	0	9	111	0	0	365	26	1056
7:45 AM	112	1	495	0	0	0	6	118	0	0	325	13	1070
8:00 AM	57	2	314	0	0	0	3	96	0	0	259	5	736
8:15 AM	76	1	265	0	0	0	7	93	0	0	278	17	737
8:30 AM	68	0	273	0	0	0	9	75	0	0	265	20	710
8:45 AM	85	0	289	0	0	0	8	84	0	0	309	12	787
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	612	6	2593	0	0	0	57	748	0	0	2455	142	6613
APPROACH %'s :	19.06%	0.19%	80.75%	#DIV/0!	#DIV/0!	#DIV/0!	7.08%	92.92%	0.00%	0.00%	94.53%	5.47%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	323	5	1565	0	0	0	29	428	0	0	1299	71	3720
PEAK HR FACTOR :		0.778			0.000			0.921			0.876		0.869

UTURNS			
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-008 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

PM

NS/EW Streets:	I-215 NB Ramps			I-215 NB Ramps			University Pkwy			University Pkwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0.5	0.5	2	0	0	0	1	2	0	0	3	1	
4:00 PM	82	0	335	0	0	0	14	132	0	0	479	30	1072
4:15 PM	80	1	294	0	0	0	16	134	0	0	380	26	931
4:30 PM	103	0	330	0	0	0	12	120	0	0	337	20	922
4:45 PM	113	1	356	0	0	0	9	126	0	0	309	19	933
5:00 PM	95	0	348	0	0	0	14	146	0	0	392	24	1019
5:15 PM	104	1	439	0	0	0	13	134	0	0	391	17	1099
5:30 PM	132	6	522	0	0	0	8	158	0	0	408	12	1246
5:45 PM	102	3	499	0	0	0	9	155	0	0	420	18	1206
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	811	12	3123	0	0	0	95	1105	0	0	3116	166	8428
APPROACH %'s :	20.55%	0.30%	79.14%	#DIV/0!	#DIV/0!	#DIV/0!	7.92%	92.08%	0.00%	0.00%	94.94%	5.06%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	433	10	1808	0	0	0	44	593	0	0	1611	71	4570
PEAK HR FACTOR :		0.853			0.000			0.959			0.960		0.917

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

I-215 NB Ramps and University Pkwy , San Bernardino

Date: 3/15/2016

Day: Tuesday

Project #: 16-6034-008

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	Lanes 0	Lanes 0		
AM	0	0	0	105	AM
NOON	0	0	0	0	NOON
PM	0	0	0	125	PM

Eastbound Approach (University Pkwy)

Lanes	AM	NOON	PM
	1622	0	2044
1	29	0	44
2	428	0	593
0	0	0	0

Westbound Approach

	AM	NOON	PM	Lanes
	71	0	71	1
	1299	0	1611	3
	0	0	0	0
	1993	0	2401	

CONTROL

Signalized

Northbound Approach

AM	0	323	5	1565
NOON	0	0	0	0
PM	0	433	10	1808
Lanes		0.5	0.5	2

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	0	0	125
East Leg	1370	0	1682
West Leg	1622	0	2044
	457	0	637
South Leg	0	0	2251
	1993	0	2401
	0	0	1893

Total Volume Per Leg

	AM	NOON	PM
North Leg	105	0	125
West Leg	2079	0	2681
East Leg	3363	0	4083
South Leg	1893	0	2251

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-009 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

AM

NS/EW Streets:	Kendall Dr			Kendall Dr			University Pkwy			University Pkwy				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	2	2	0	2	2	0	2	3	0	1	3	0					
7:00 AM	44	47	3	39	69	44	9	100	29	3	47	15	449	0	0	0	0
7:15 AM	70	105	12	49	118	50	24	175	44	3	65	29	744	0	0	0	0
7:30 AM	67	69	10	37	102	54	22	336	17	10	81	23	828	0	0	0	1
7:45 AM	51	49	41	51	88	33	19	418	13	4	62	5	834	0	0	0	0
8:00 AM	45	51	22	40	60	37	27	278	30	7	68	9	674	0	0	0	0
8:15 AM	43	45	8	41	77	57	18	193	41	2	59	11	595	0	0	1	1
8:30 AM	64	76	12	32	70	31	31	168	33	9	58	14	598	0	0	0	1
8:45 AM	59	46	15	24	64	45	27	227	24	6	71	14	622	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	443	488	123	313	648	351	177	1895	231	44	511	120	5344	0	0	1	3
APPROACH %'s :	42.03%	46.30%	11.67%	23.86%	49.39%	26.75%	7.69%	82.28%	10.03%	6.52%	75.70%	17.78%					

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	233	274	85	177	368	174	92	1207	104	24	276	66	3080
PEAK HR FACTOR :		0.791			0.828			0.779			0.803		0.923

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-6034-009 **Day:** Tuesday

City: San Bernardino **Date:** 3/15/2016

PM

NS/EW Streets:	Kendall Dr			Kendall Dr			University Pkwy			University Pkwy				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	2	2	0	2	2	0	2	3	0	1	3	0					
4:00 PM	56	91	16	24	73	27	66	160	76	27	237	19	872	0	0	0	0
4:15 PM	53	87	16	18	74	47	64	98	59	19	170	22	727	0	0	1	0
4:30 PM	55	76	16	22	78	39	75	152	61	8	138	18	738	0	0	0	0
4:45 PM	58	93	14	18	81	36	65	148	48	20	154	12	747	0	0	1	1
5:00 PM	56	87	13	18	78	37	84	148	76	30	234	18	879	0	0	1	0
5:15 PM	55	102	7	30	87	34	86	160	68	29	232	24	914	0	0	0	0
5:30 PM	53	99	21	32	95	46	128	272	70	18	241	23	1098	0	0	0	0
5:45 PM	51	95	22	32	71	38	103	265	74	24	326	26	1127	0	0	2	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	437	730	125	194	637	304	671	1403	532	175	1732	162	7102	0	0	5	1
APPROACH %'s :	33.82%	56.50%	9.67%	17.09%	56.12%	26.78%	25.75%	53.84%	20.41%	8.46%	83.71%	7.83%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	215	383	63	112	331	155	401	845	288	101	1033	91	4018
PEAK HR FACTOR :		0.955			0.864			0.816			0.814		0.891

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Kendall Dr and University Pkwy , San Bernardino

Date: 3/15/2016

Day: Tuesday

Project #: 16-6034-009

City: San Bernardino

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach

Kendall Dr

Lanes	0	2	2		
AM	174	368	177	432	AM
NOON	0	0	0	0	NOON
PM	155	331	112	875	PM

Eastbound Approach

University Pkwy

	AM	NOON	PM
	683	0	1403
2	92	0	401
3	1207	0	845
0	104	0	288
Lanes	AM	NOON	PM

CONTROL

Signalized

Westbound Approach

	AM	NOON	PM	Lanes
	66	0	91	0
	276	0	1033	3
	24	0	101	1
	1469	0	1020	
	AM	NOON	PM	

Northbound Approach

AM	496	233	274	85	AM
NOON	0	0	0	0	NOON
PM	720	215	383	63	PM
		2	2	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		
	719	432	AM
	0	0	NOON
	598	875	PM

West Leg			East Leg		
AM	NOON	PM			
683	0	1403	366	0	1225
1403	0	1534	1469	0	1020
			AM	NOON	PM

South Leg		
496	592	AM
0	0	NOON
720	661	PM

Total Volume Per Leg

	North Leg	
	1151	AM
	0	NOON
	1473	PM

West Leg			East Leg		
AM	NOON	PM			
2086	0	2937	1835	0	2245
			AM	NOON	PM

South Leg	
1088	AM
0	NOON
1381	PM

APPENDIX C

INTERSECTION ANALYSIS WORKSHEETS

IPT I-215 DC II

Vistro File: K:\...\SB I-215 DC II AM.vistro
Report File: K:\...\Ex AM.pdf

Scenario 1: Ex AM
4/4/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Palm Ave / Hallmark Pkwy	Two-way stop	HCM2010	EBL	0.013	16.7	C
2	Palm Ave / I-215 SB Ramps	Signalized	HCM2010	EBT	1.002	86.3	F
3	Palm Ave / I-215 NB Ramps	Signalized	HCM2010	WBR	0.743	21.3	C
4	Palm Ave / Kendall Dr	Signalized	HCM2010	NBL	0.657	33.0	C
5	Hallmark Pkwy / Saratoga Way	Two-way stop	HCM2010	EBT	0.000	11.7	B
6	University Pkwy / Hallmark Pkwy	Signalized	HCM2010	NBL	0.431	31.3	C
7	University Pkwy / I-215 SB Ramps	Signalized	HCM2010	NBR	0.685	25.2	C
8	University Pkwy / I-215 NB Ramps	Signalized	HCM2010	SBT	1.058	84.9	F
9	University Pkwy / Kendall Dr	Signalized	HCM2010	WBL	0.604	30.7	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
#1: Palm Ave / Hallmark Pkwy

Control Type:	Two-way stop	Delay (sec / veh):	16.7
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			yes		

Volumes

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	9	123	1	84	272	1	3	3	2	2	4	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	123	1	84	272	1	3	3	2	2	4	24
Peak Hour Factor	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	37	0	25	82	0	1	1	1	1	1	7
Total Analysis Volume [veh/h]	11	149	1	102	330	1	4	4	2	2	5	29
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.02	0.03
d_M, Delay for Movement [s/veh]	7.96	0.00	0.00	7.71	0.00	0.00	16.75	16.13	10.34	16.18	16.03	9.13
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	A
95th-Percentile Queue Length [veh]	0.03	0.00	0.00	0.23	0.00	0.00	0.08	0.08	0.08	0.02	0.09	0.07
95th-Percentile Queue Length [ft]	0.68	0.00	0.00	5.75	0.00	0.00	2.12	2.12	2.12	0.47	2.19	1.82
d_A, Approach Delay [s/veh]	0.54			1.82			15.22			10.48		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	2.19											
Intersection LOS	C											

Intersection Level Of Service Report
#2: Palm Ave / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	86.3
Analysis Method:	HCM2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.002

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	24	108	47	723	276	73	33	70	28	87	1	278
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	108	47	723	276	73	33	70	28	87	1	278
Peak Hour Factor	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	32	14	214	82	22	10	21	8	26	0	82
Total Analysis Volume [veh/h]	28	128	56	857	327	86	39	83	33	103	1	329
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	15	0	63	68	0	0	15	0	0	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no			no			no	
Maximum Recall	no	no		no	no			no			no	
Pedestrian Recall	no	no		no	no			no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	7	12	12	60	65	65	12	34
g / C, Green / Cycle	0.05	0.09	0.09	0.46	0.50	0.50	0.09	0.26
(v / s)_i Volume / Saturation Flow Rate	0.02	0.05	0.06	0.51	0.12	0.12	0.09	0.28
s, saturation flow rate [veh/h]	1681	1765	1590	1681	1765	1640	1680	1540
c, Capacity [veh/h]	90	163	147	776	882	820	155	403
d1, Uniform Delay [s]	59.17	56.56	56.77	35.00	18.49	18.50	59.00	48.00
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.67	14.01	17.68	64.93	0.65	0.70	72.07	66.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

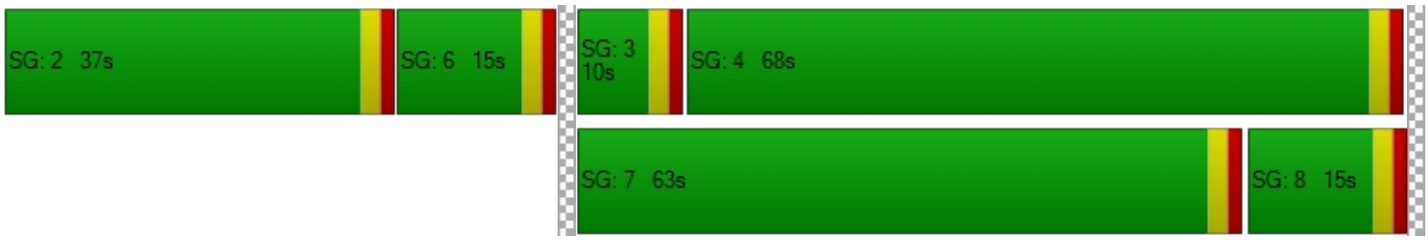
X, volume / capacity	0.31	0.58	0.61	1.10	0.24	0.24	1.00	1.08
d, Delay for Lane Group [s/veh]	67.84	70.58	74.45	99.93	19.13	19.21	131.06	114.38
Lane Group LOS	E	E	E	F	B	B	F	F
Critical Lane Group	no	no	yes	yes	no	no	yes	yes
50th-Percentile Queue Length [veh]	1.11	3.60	3.58	37.85	3.84	3.61	8.21	20.40
50th-Percentile Queue Length [ft]	27.72	89.99	89.39	946.19	96.04	90.22	205.24	509.92
95th-Percentile Queue Length [veh]	2.00	6.48	6.44	51.68	6.92	6.50	12.91	29.04
95th-Percentile Queue Length [ft]	49.89	161.98	160.90	1292.10	172.88	162.39	322.71	725.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	67.84	71.61	74.45	99.93	19.16	19.21	131.06	131.06	131.06	114.38	114.38	114.38
Movement LOS	E	E	E	F	B	B	F	F	F	F	F	F
d_A, Approach Delay [s/veh]	71.86			73.67			131.06			114.38		
Approach LOS	E			E			F			F		
d_I, Intersection Delay [s/veh]	86.30											
Intersection LOS	F											
Intersection V/C	1.002											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#3: Palm Ave / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.3
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.743

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	29	390	0	0	921	331	0	0	0	152	1	385
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	390	0	0	921	331	0	0	0	152	1	385
Peak Hour Factor	0.9080	0.9080	0.9500	0.9500	0.9080	0.9080	0.9500	0.9500	0.9500	0.9080	0.9080	0.9080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	107	0	0	254	91	0	0	0	42	0	106
Total Analysis Volume [veh/h]	32	430	0	0	1014	365	0	0	0	167	1	424
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	53	0	0	53	0	0	0	0	0	37	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall		no			no						no	
Maximum Recall		no			no						no	
Pedestrian Recall		no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	C	C		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	50	50	50	50		34	34
g / C, Green / Cycle	0.56	0.56	0.56	0.56		0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.23	0.21	0.39	0.43		0.10	0.28
s, saturation flow rate [veh/h]	540	1606	1765	1614		1681	1500
c, Capacity [veh/h]	350	892	980	897		635	567
d1, Uniform Delay [s]	13.92	11.26	14.59	15.52		19.36	24.29
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	2.80	1.22	4.22	6.30		1.02	8.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

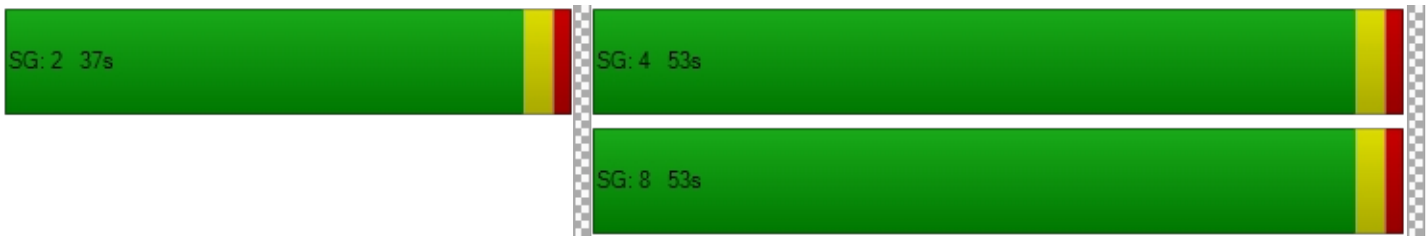
X, volume / capacity	0.35	0.38	0.70	0.77		0.26	0.75
d, Delay for Lane Group [s/veh]	16.72	12.48	18.81	21.82		20.37	33.05
Lane Group LOS	B	B	B	C		C	C
Critical Lane Group	no	no	no	yes		no	yes
50th-Percentile Queue Length [veh]	1.37	3.82	10.46	11.47		2.54	8.87
50th-Percentile Queue Length [ft]	34.30	95.53	261.47	286.82		63.61	221.73
95th-Percentile Queue Length [veh]	2.47	6.88	15.76	17.03		4.58	13.75
95th-Percentile Queue Length [ft]	61.75	171.96	394.07	425.69		114.50	343.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.72	13.39	0.00	0.00	19.77	21.82	0.00	0.00	0.00	20.37	20.37	33.05
Movement LOS	B	B			B	C				C	C	C
d_A, Approach Delay [s/veh]	13.62			20.31			0.00			29.45		
Approach LOS	B			C			A			C		
d_I, Intersection Delay [s/veh]	21.27											
Intersection LOS	C											
Intersection V/C	0.743											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#4: Palm Ave / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	33.0
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

Intersection Setup

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Base Volume Input [veh/h]	121	343	311	141	757	71	25	75	160	323	97	154
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	121	343	311	141	757	71	25	75	160	323	97	154
Peak Hour Factor	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	99	90	41	220	21	7	22	46	94	28	45
Total Analysis Volume [veh/h]	140	398	361	164	878	82	29	87	186	375	113	179
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	30	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	37	37	16	39	0	10	19	0	18	27	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no	no	no	no		no	no		no	no	
Maximum Recall	no	no	no	no	no		no	no		no	no	
Pedestrian Recall	no	no	no	no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	11	34	34	13	36	36	7	16	16	15	24	24
g / C, Green / Cycle	0.12	0.38	0.38	0.14	0.40	0.40	0.08	0.18	0.18	0.17	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.08	0.12	0.24	0.10	0.28	0.28	0.02	0.05	0.12	0.11	0.06	0.12
s, saturation flow rate [veh/h]	1681	3360	1500	1681	1765	1712	1681	1765	1500	3264	1765	1500
c, Capacity [veh/h]	205	1269	567	243	706	685	131	314	267	544	471	400
d1, Uniform Delay [s]	37.82	19.76	22.94	36.50	22.38	22.38	38.94	32.00	34.73	35.31	25.86	27.48
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.79	0.65	5.40	14.08	5.46	5.64	3.88	2.19	14.10	6.99	1.20	3.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.68	0.31	0.64	0.68	0.69	0.69	0.22	0.28	0.70	0.69	0.24	0.45
d, Delay for Lane Group [s/veh]	54.61	20.41	28.34	50.58	27.84	28.02	42.83	34.19	48.83	42.30	27.06	31.07
Lane Group LOS	D	C	C	D	C	C	D	C	D	D	C	C
Critical Lane Group	yes	no	no	no	no	yes	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	3.87	2.97	6.87	4.31	9.22	8.99	0.74	1.81	4.80	4.33	2.02	3.54
50th-Percentile Queue Length [ft]	96.72	74.36	171.84	107.81	230.54	224.72	18.41	45.19	119.92	108.27	50.57	88.48
95th-Percentile Queue Length [veh]	6.96	5.35	11.17	7.72	14.20	13.91	1.33	3.25	8.39	7.74	3.64	6.37
95th-Percentile Queue Length [ft]	174.10	133.85	279.34	192.95	355.05	347.64	33.13	81.35	209.72	193.59	91.02	159.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.61	20.41	28.34	50.58	27.92	28.02	42.83	34.19	48.83	42.30	27.06	31.07
Movement LOS	D	C	C	D	C	C	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	28.92			31.23			44.04			36.70		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	33.05											
Intersection LOS	C											
Intersection V/C	0.657											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#5: Hallmark Pkwy / Saratoga Way

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Base Volume Input [veh/h]	12	188	10	2	122	4	0	0	9	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	188	10	2	122	4	0	0	9	2	0	0
Peak Hour Factor	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	52	3	1	34	1	0	0	3	1	0	0
Total Analysis Volume [veh/h]	13	209	11	2	136	4	0	0	10	2	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.52	0.00	0.00	7.68	0.00	0.00	10.55	11.71	8.72	10.96	11.66	8.92
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh]	0.03	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03	0.01	0.01	0.01
95th-Percentile Queue Length [ft]	0.68	0.00	0.00	0.11	0.00	0.00	0.77	0.77	0.77	0.25	0.25	0.25
d_A, Approach Delay [s/veh]	0.42			0.11			8.72			10.96		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	0.57											
Intersection LOS	B											

Intersection Level Of Service Report
#6: University Pkwy / Hallmark Pkwy

Control Type:	Signalized	Delay (sec / veh):	31.3
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.431

Intersection Setup

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	79	419	4	17	347	299	211	6	37	4	3	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	79	419	4	17	347	299	211	6	37	4	3	23
Peak Hour Factor	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	112	1	5	93	80	56	2	10	1	1	6
Total Analysis Volume [veh/h]	85	449	4	18	372	320	226	6	40	4	3	25
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	6	0	6	0	0	2	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	7	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	30	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	23	0	10	21	39	0	39	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	10	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no	no		no			no	
Maximum Recall	no	no		no	no	no		no			no	
Pedestrian Recall	no	no		no	no	no		no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	9	20	20	7	18	36	36	36	36	15	15
g / C, Green / Cycle	0.10	0.22	0.22	0.08	0.20	0.40	0.40	0.40	0.40	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.13	0.01	0.11	0.21	0.07	0.07	0.03	0.00	0.02
s, saturation flow rate [veh/h]	1681	1765	1759	1681	3360	1500	1681	1685	1500	1681	1525
c, Capacity [veh/h]	168	392	391	131	672	600	672	674	600	280	254
d1, Uniform Delay [s]	38.39	31.24	31.24	38.69	32.39	20.59	17.40	17.40	16.64	31.32	31.83
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.47	6.10	6.13	2.19	3.27	3.37	0.56	0.56	0.21	0.09	0.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.58	0.58	0.14	0.55	0.53	0.17	0.17	0.07	0.01	0.11
d, Delay for Lane Group [s/veh]	48.86	37.33	37.36	40.87	35.65	23.97	17.96	17.95	16.86	31.42	32.71
Lane Group LOS	D	D	D	D	D	C	B	B	B	C	C
Critical Lane Group	yes	no	no	no	yes	yes	no	no	no	no	yes
50th-Percentile Queue Length [veh]	2.24	4.97	4.96	0.45	3.88	5.49	1.61	1.61	0.53	0.08	0.57
50th-Percentile Queue Length [ft]	56.12	124.34	124.11	11.16	97.12	137.27	40.30	40.37	13.34	1.98	14.34
95th-Percentile Queue Length [veh]	4.04	8.63	8.62	0.80	6.99	9.33	2.90	2.91	0.96	0.14	1.03
95th-Percentile Queue Length [ft]	101.02	215.78	215.46	20.09	174.82	233.34	72.54	72.67	24.01	3.56	25.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.86	37.35	37.36	40.87	35.65	23.97	17.96	17.95	16.86	31.42	32.71	32.71
Movement LOS	D	D	D	D	D	C	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	39.17			30.52			17.79			32.55		
Approach LOS	D			C			B			C		
d_I, Intersection Delay [s/veh]	31.33											
Intersection LOS	C											
Intersection V/C	0.431											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#7: University Pkwy / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.685

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	0	374	291	1067	614	0	60	4	72	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	374	291	1067	614	0	60	4	72	0	0	0
Peak Hour Factor	0.9500	0.9280	0.9280	0.9280	0.9280	0.9500	0.9280	0.9280	0.9280	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	101	78	287	165	0	16	1	19	0	0	0
Total Analysis Volume [veh/h]	0	403	314	1150	662	0	65	4	78	0	0	0
Presence of On-Street Parking			no	no			no		no			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	30	0	42	72	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Minimum Recall		no		no	no			no				
Maximum Recall		no		no	no			no				
Pedestrian Recall		no		no	no			no				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	
g_i, Effective Green Time [s]	27	27	39	69	15	15	
g / C, Green / Cycle	0.30	0.30	0.43	0.77	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.20	0.23	0.35	0.38	0.04	0.05	
s, saturation flow rate [veh/h]	1765	1528	3264	1765	1685	1500	
c, Capacity [veh/h]	529	459	1414	1353	281	250	
d1, Uniform Delay [s]	27.67	28.81	22.31	3.92	32.58	32.96	
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	6.81	12.48	5.21	1.27	2.07	3.23	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

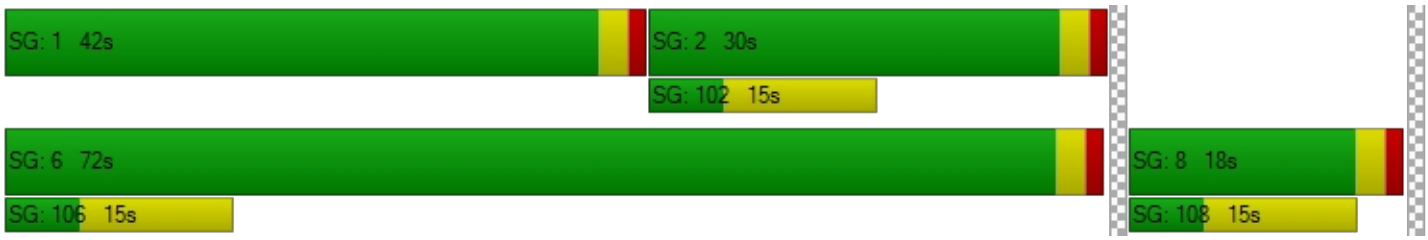
X, volume / capacity	0.68	0.78	0.81	0.49	0.25	0.31	
d, Delay for Lane Group [s/veh]	34.48	41.29	27.52	5.19	34.66	36.20	
Lane Group LOS	C	D	C	A	C	D	
Critical Lane Group	no	yes	yes	no	no	yes	
50th-Percentile Queue Length [veh]	7.58	8.44	11.04	3.60	1.45	1.70	
50th-Percentile Queue Length [ft]	189.44	210.88	276.02	90.02	36.33	42.53	
95th-Percentile Queue Length [veh]	12.09	13.20	16.49	6.48	2.62	3.06	
95th-Percentile Queue Length [ft]	302.30	329.95	412.26	162.04	65.39	76.56	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	35.24	41.29	27.52	5.19	0.00	34.66	34.66	36.20	0.00	0.00	0.00
Movement LOS		D	D	C	A		C	C	D			
d_A, Approach Delay [s/veh]	37.89			19.36			35.47			0.00		
Approach LOS	D			B			D			A		
d_I, Intersection Delay [s/veh]	25.21											
Intersection LOS	C											
Intersection V/C	0.685											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#8: University Pkwy / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	84.9
Analysis Method:	HCM2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.058

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Base Volume Input [veh/h]	29	428	0	0	1299	71	0	0	0	323	5	1565
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	428	0	0	1299	71	0	0	0	323	5	1565
Peak Hour Factor	0.8690	0.8690	0.9500	0.9500	0.8690	0.8690	0.9500	0.9500	0.9500	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	123	0	0	374	20	0	0	0	93	1	450
Total Analysis Volume [veh/h]	33	493	0	0	1495	82	0	0	0	372	6	1801
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	10	49	0	0	39	0	0	0	0	0	81	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no			no						no	
Maximum Recall	no	no			no						no	
Pedestrian Recall	no	no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	R		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	7	46	36	36		78	78
g / C, Green / Cycle	0.05	0.35	0.28	0.28		0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.02	0.15	0.31	0.05		0.22	0.68
s, saturation flow rate [veh/h]	1681	3360	4807	1500		1682	2655
c, Capacity [veh/h]	90	1189	1331	415		1009	1593
d1, Uniform Delay [s]	59.35	31.81	47.00	35.95		13.41	26.00
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	10.99	1.07	65.77	1.06		1.06	67.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

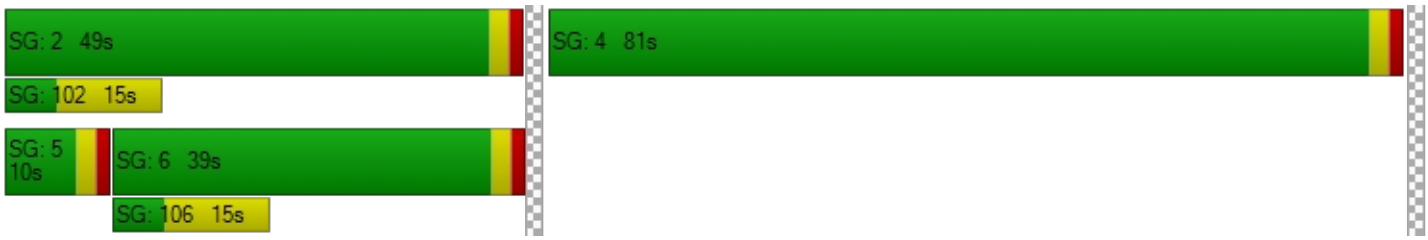
X, volume / capacity	0.36	0.41	1.12	0.20		0.37	1.13
d, Delay for Lane Group [s/veh]	70.35	32.87	112.77	37.01		14.48	93.30
Lane Group LOS	E	C	F	D		B	F
Critical Lane Group	yes	no	yes	no		no	yes
50th-Percentile Queue Length [veh]	1.33	6.08	22.36	2.14		5.93	37.91
50th-Percentile Queue Length [ft]	33.23	152.10	559.00	53.43		148.37	947.73
95th-Percentile Queue Length [veh]	2.39	10.13	32.27	3.85		9.93	52.98
95th-Percentile Queue Length [ft]	59.82	253.23	806.81	96.18		248.25	1324.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	70.35	32.87	0.00	0.00	112.77	37.01	0.00	0.00	0.00	14.48	14.48	93.30
Movement LOS	E	C			F	D				B	B	F
d_A, Approach Delay [s/veh]	35.22			108.83			0.00			79.63		
Approach LOS	D			F			A			E		
d_I, Intersection Delay [s/veh]	84.93											
Intersection LOS	F											
Intersection V/C	1.058											

Sequence

Ring 1	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#9: University Pkwy / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	30.7
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.604

Intersection Setup

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Base Volume Input [veh/h]	92	1207	104	24	276	66	177	368	174	233	274	85
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	1207	104	24	276	66	177	368	174	233	274	85
Peak Hour Factor	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	327	28	7	75	18	48	100	47	63	74	23
Total Analysis Volume [veh/h]	100	1308	113	26	299	72	192	399	189	252	297	92
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	10	39	0	13	27	0	14	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no		no	no		no	no		no	no	
Maximum Recall	no	no		no	no		no	no		no	no	
Pedestrian Recall	no	no		no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	7	36	36	7	36	36	10	24	24	11	25	25
g / C, Green / Cycle	0.08	0.40	0.40	0.08	0.40	0.40	0.11	0.27	0.27	0.12	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.03	0.28	0.28	0.02	0.07	0.08	0.06	0.18	0.18	0.08	0.11	0.12
s, saturation flow rate [veh/h]	3264	3360	1694	1681	3360	1600	3264	1765	1576	3264	1765	1624
c, Capacity [veh/h]	254	1344	678	131	1344	640	363	471	420	399	490	451
d1, Uniform Delay [s]	39.48	22.54	22.54	38.87	17.49	17.56	37.78	29.36	29.38	37.57	26.50	26.53
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.53	3.10	6.02	3.39	0.30	0.67	5.44	7.06	7.96	7.41	2.54	2.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

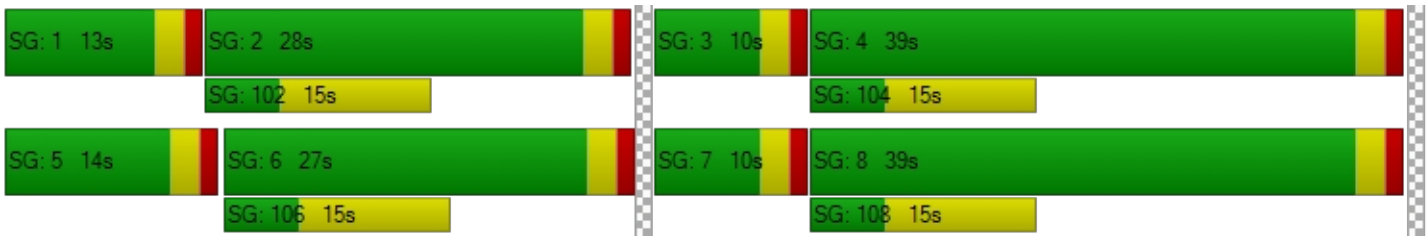
X, volume / capacity	0.39	0.70	0.70	0.20	0.18	0.19	0.53	0.66	0.66	0.63	0.41	0.42
d, Delay for Lane Group [s/veh]	44.02	25.63	28.55	42.26	17.79	18.23	43.22	36.42	37.34	44.98	29.04	29.34
Lane Group LOS	D	C	C	D	B	B	D	D	D	D	C	C
Critical Lane Group	no	no	yes	yes	no	no	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	1.20	8.54	9.16	0.66	1.67	1.75	2.25	6.73	6.14	3.01	3.80	3.56
50th-Percentile Queue Length [ft]	30.01	213.49	229.00	16.39	41.81	43.65	56.17	168.33	153.59	75.32	95.01	89.10
95th-Percentile Queue Length [veh]	2.16	13.33	14.12	1.18	3.01	3.14	4.04	10.99	10.21	5.42	6.84	6.42
95th-Percentile Queue Length [ft]	54.01	333.31	353.09	29.51	75.26	78.57	101.10	274.72	255.21	135.58	171.03	160.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.02	26.44	28.55	42.26	17.86	18.23	43.22	36.62	37.34	44.98	29.14	29.34
Movement LOS	D	C	C	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	27.76			19.53			38.42			35.39		
Approach LOS	C			B			D			D		
d_I, Intersection Delay [s/veh]	30.74											
Intersection LOS	C											
Intersection V/C	0.604											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



IPT I-215 DC II

Vistro File: K:\...\SB I-215 DC II PM.vistro
Report File: K:\...\Ex PM.pdf

Scenario 1: Ex PM
4/4/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Palm Ave / Hallmark Pkwy	Two-way stop	HCM2010	EBL	0.000	15.0	B
2	Palm Ave / I-215 SB Ramps	Signalized	HCM2010	NBR	0.627	37.1	D
3	Palm Ave / I-215 NB Ramps	Signalized	HCM2010	WBR	0.695	23.2	C
4	Palm Ave / Kendall Dr	Signalized	HCM2010	SBL	0.579	31.0	C
5	Hallmark Pkwy / Saratoga Way	Two-way stop	HCM2010	EBT	0.000	14.8	B
6	University Pkwy / Hallmark Pkwy	Signalized	HCM2010	NBL	0.559	32.0	C
7	University Pkwy / I-215 SB Ramps	Signalized	HCM2010	NBR	0.800	35.3	D
8	University Pkwy / I-215 NB Ramps	Signalized	HCM2010	SBT	1.192	126.4	F
9	University Pkwy / Kendall Dr	Signalized	HCM2010	SBL	0.686	33.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
#1: Palm Ave / Hallmark Pkwy

Control Type:	Two-way stop	Delay (sec / veh):	15.0
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			yes		

Volumes

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	1	201	9	71	87	2	0	3	1	5	3	146
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	201	9	71	87	2	0	3	1	5	3	146
Peak Hour Factor	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	57	3	20	25	1	0	1	0	1	1	42
Total Analysis Volume [veh/h]	1	229	10	81	99	2	0	3	1	6	3	167
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.21
d_M, Delay for Movement [s/veh]	7.42	0.00	0.00	7.89	0.00	0.00	14.97	13.19	8.82	12.94	13.61	9.98
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.19	0.00	0.00	0.02	0.02	0.02	0.04	0.36	0.36
95th-Percentile Queue Length [ft]	0.05	0.00	0.00	4.87	0.00	0.00	0.59	0.59	0.59	0.99	9.04	8.90
d_A, Approach Delay [s/veh]	0.03			3.51			12.10			10.14		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	4.12											
Intersection LOS	B											

Intersection Level Of Service Report
#2: Palm Ave / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	37.1
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.627

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	15	222	129	317	124	83	42	52	20	23	6	231
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	222	129	317	124	83	42	52	20	23	6	231
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	59	34	84	33	22	11	14	5	6	2	62
Total Analysis Volume [veh/h]	16	237	138	338	132	88	45	55	21	25	6	246
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	19	0	29	38	0	0	15	0	0	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no			no			no	
Maximum Recall	no	no		no	no			no			no	
Pedestrian Recall	no	no		no	no			no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	7	16	16	26	35	35	12	24
g / C, Green / Cycle	0.08	0.18	0.18	0.29	0.39	0.39	0.13	0.27
(v / s)_i Volume / Saturation Flow Rate	0.01	0.11	0.12	0.20	0.07	0.07	0.07	0.18
s, saturation flow rate [veh/h]	1681	1765	1554	1681	1765	1535	1682	1520
c, Capacity [veh/h]	131	314	276	486	686	597	224	405
d1, Uniform Delay [s]	38.64	34.21	34.40	28.48	17.99	18.02	36.42	29.59
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.91	8.99	11.31	8.02	0.53	0.63	9.01	9.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

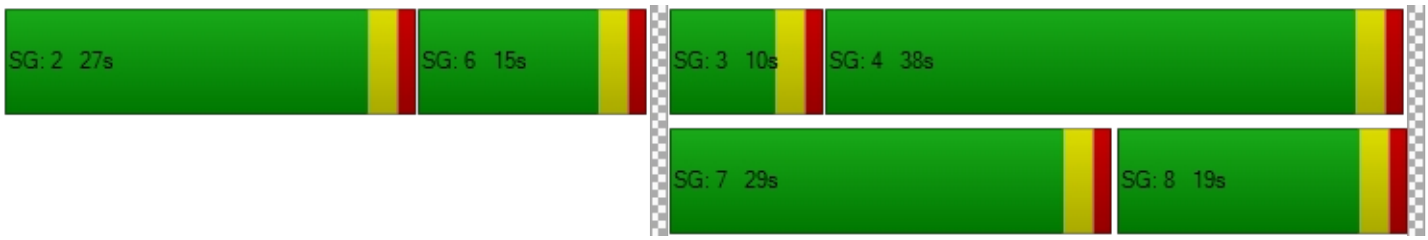
X, volume / capacity	0.12	0.62	0.65	0.70	0.17	0.17	0.54	0.68
d, Delay for Lane Group [s/veh]	40.55	43.20	45.71	36.51	18.53	18.66	45.43	38.62
Lane Group LOS	D	D	D	D	B	B	D	D
Critical Lane Group	no	no	yes	yes	no	no	yes	yes
50th-Percentile Queue Length [veh]	0.40	4.66	4.46	7.38	1.65	1.48	3.01	6.25
50th-Percentile Queue Length [ft]	9.88	116.61	111.45	184.58	41.14	37.06	75.26	156.22
95th-Percentile Queue Length [veh]	0.71	8.21	7.92	11.84	2.96	2.67	5.42	10.35
95th-Percentile Queue Length [ft]	17.79	205.16	198.02	295.99	74.06	66.71	135.47	258.71

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.55	43.64	45.71	36.51	18.54	18.66	45.43	45.43	45.43	38.62	38.62	38.62
Movement LOS	D	D	D	D	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	44.24			29.44			45.43			38.62		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	37.06											
Intersection LOS	D											
Intersection V/C	0.627											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#3: Palm Ave / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	23.2
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.695

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	60	441	0	0	438	376	0	0	0	102	3	552
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	441	0	0	438	376	0	0	0	102	3	552
Peak Hour Factor	0.9590	0.9590	0.9500	0.9500	0.9590	0.9590	0.9500	0.9500	0.9500	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	115	0	0	114	98	0	0	0	27	1	144
Total Analysis Volume [veh/h]	63	460	0	0	457	392	0	0	0	106	3	576
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	44	0	0	44	0	0	0	0	0	46	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall		no			no						no	
Maximum Recall		no			no						no	
Pedestrian Recall		no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	C	C		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	41	41	41	41		43	43
g / C, Green / Cycle	0.46	0.46	0.46	0.46		0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.25	0.23	0.24	0.28		0.06	0.38
s, saturation flow rate [veh/h]	633	1606	1765	1517		1683	1500
c, Capacity [veh/h]	344	732	804	691		804	717
d1, Uniform Delay [s]	21.31	17.29	17.56	18.52		13.12	19.92
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	4.25	2.45	2.48	4.05		0.35	9.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.50	0.53	0.61		0.14	0.80
d, Delay for Lane Group [s/veh]	25.56	19.75	20.04	22.57		13.47	29.23
Lane Group LOS	C	B	C	C		B	C
Critical Lane Group	no	no	no	yes		no	yes
50th-Percentile Queue Length [veh]	3.19	5.60	6.55	7.10		1.26	11.36
50th-Percentile Queue Length [ft]	79.71	140.12	163.72	177.49		31.60	284.08
95th-Percentile Queue Length [veh]	5.74	9.49	10.75	11.47		2.27	16.89
95th-Percentile Queue Length [ft]	143.48	237.19	268.64	286.74		56.87	422.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.56	20.92	0.00	0.00	20.22	22.57	0.00	0.00	0.00	13.47	13.47	29.23
Movement LOS	C	C			C	C				B	B	C
d_A, Approach Delay [s/veh]	21.48			21.30			0.00			26.72		
Approach LOS	C			C			A			C		
d_I, Intersection Delay [s/veh]	23.15											
Intersection LOS	C											
Intersection V/C	0.695											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#4: Palm Ave / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	31.0
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.579

Intersection Setup

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Base Volume Input [veh/h]	183	476	332	92	260	34	45	64	125	420	110	157
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	183	476	332	92	260	34	45	64	125	420	110	157
Peak Hour Factor	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	129	90	25	70	9	12	17	34	114	30	42
Total Analysis Volume [veh/h]	198	515	359	99	281	37	49	69	135	454	119	170
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	30	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	37	37	12	26	0	10	18	0	23	31	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no	no	no	no		no	no		no	no	
Maximum Recall	no	no	no	no	no		no	no		no	no	
Pedestrian Recall	no	no	no	no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	20	34	34	9	23	23	7	15	15	20	28	28
g / C, Green / Cycle	0.22	0.38	0.38	0.10	0.26	0.26	0.08	0.17	0.17	0.22	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.12	0.15	0.24	0.06	0.09	0.09	0.03	0.04	0.09	0.14	0.07	0.11
s, saturation flow rate [veh/h]	1681	3360	1500	1681	1765	1694	1681	1765	1500	3264	1765	1500
c, Capacity [veh/h]	373	1269	567	168	451	433	131	294	250	725	549	467
d1, Uniform Delay [s]	30.86	20.58	22.90	38.73	27.45	27.48	39.42	32.52	34.34	31.62	22.90	24.09
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.30	0.96	5.32	14.25	2.20	2.34	8.03	1.87	8.13	4.06	0.90	2.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

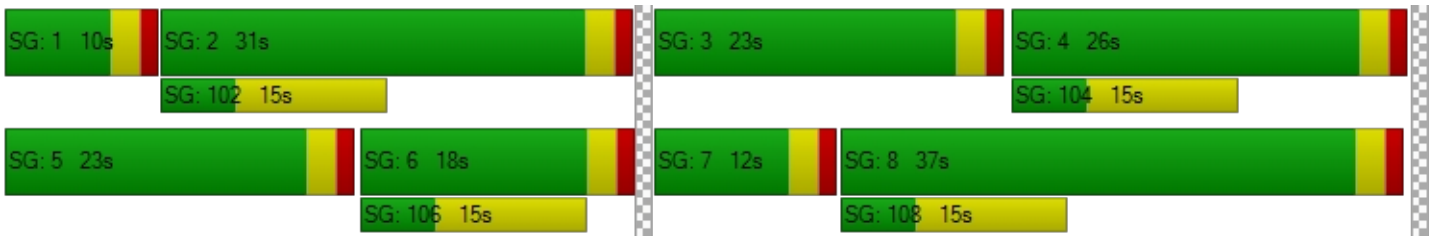
X, volume / capacity	0.53	0.41	0.63	0.59	0.36	0.36	0.37	0.23	0.54	0.63	0.22	0.36
d, Delay for Lane Group [s/veh]	36.16	21.54	28.22	52.98	29.65	29.82	47.45	34.39	42.47	35.68	23.80	26.28
Lane Group LOS	D	C	C	D	C	C	D	C	D	D	C	C
Critical Lane Group	no	no	yes	yes	no	no	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	4.27	4.02	6.82	2.73	3.07	3.00	1.31	1.44	3.23	4.78	1.97	3.03
50th-Percentile Queue Length [ft]	106.68	100.59	170.44	68.22	76.65	74.98	32.74	36.03	80.69	119.38	49.19	75.83
95th-Percentile Queue Length [veh]	7.65	7.24	11.10	4.91	5.52	5.40	2.36	2.59	5.81	8.36	3.54	5.46
95th-Percentile Queue Length [ft]	191.37	181.06	277.50	122.80	137.97	134.96	58.93	64.86	145.24	208.97	88.54	136.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.16	21.54	28.22	52.98	29.72	29.82	47.45	34.39	42.47	35.68	23.80	26.28
Movement LOS	D	C	C	D	C	C	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	26.48			35.26			41.23			31.62		
Approach LOS	C			D			D			C		
d_I, Intersection Delay [s/veh]	30.99											
Intersection LOS	C											
Intersection V/C	0.579											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#5: Hallmark Pkwy / Saratoga Way

Control Type:	Two-way stop	Delay (sec / veh):	14.8
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Base Volume Input [veh/h]	31	178	0	0	290	8	10	0	58	9	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	178	0	0	290	8	10	0	58	9	0	0
Peak Hour Factor	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	52	0	0	84	2	3	0	17	3	0	0
Total Analysis Volume [veh/h]	36	206	0	0	336	9	12	0	67	10	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.08	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	8.06	0.00	0.00	7.64	0.00	0.00	13.92	14.79	9.87	13.26	14.44	9.05
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh]	0.09	0.00	0.00	0.00	0.00	0.00	0.36	0.36	0.36	0.07	0.07	0.07
95th-Percentile Queue Length [ft]	2.30	0.00	0.00	0.00	0.00	0.00	8.99	8.99	8.99	1.72	1.72	1.72
d_A, Approach Delay [s/veh]	1.20			0.00			10.48			13.26		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	1.85											
Intersection LOS	B											

Intersection Level Of Service Report
#6: University Pkwy / Hallmark Pkwy

Control Type:	Signalized	Delay (sec / veh):	32.0
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.559

Intersection Setup

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	142	376	11	40	440	351	536	14	181	10	12	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	142	376	11	40	440	351	536	14	181	10	12	39
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	99	3	11	116	93	142	4	48	3	3	10
Total Analysis Volume [veh/h]	150	397	12	42	465	371	567	15	191	11	13	41
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	6	0	6	0	0	2	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	7	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	30	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	15	26	0	10	21	36	0	36	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	10	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no	no		no			no	
Maximum Recall	no	no		no	no	no		no			no	
Pedestrian Recall	no	no		no	no	no		no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	12	23	23	7	18	33	33	33	33	15	15
g / C, Green / Cycle	0.13	0.26	0.26	0.08	0.20	0.37	0.37	0.37	0.37	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.09	0.12	0.12	0.02	0.14	0.25	0.17	0.17	0.13	0.01	0.03
s, saturation flow rate [veh/h]	1681	1765	1747	1681	3360	1500	1681	1685	1500	1681	1556
c, Capacity [veh/h]	224	451	446	131	672	550	616	618	550	280	259
d1, Uniform Delay [s]	37.11	28.22	28.23	39.25	33.43	23.98	21.83	21.82	20.68	31.46	32.37
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.79	3.29	3.34	6.39	5.78	6.50	2.58	2.57	1.73	0.26	1.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

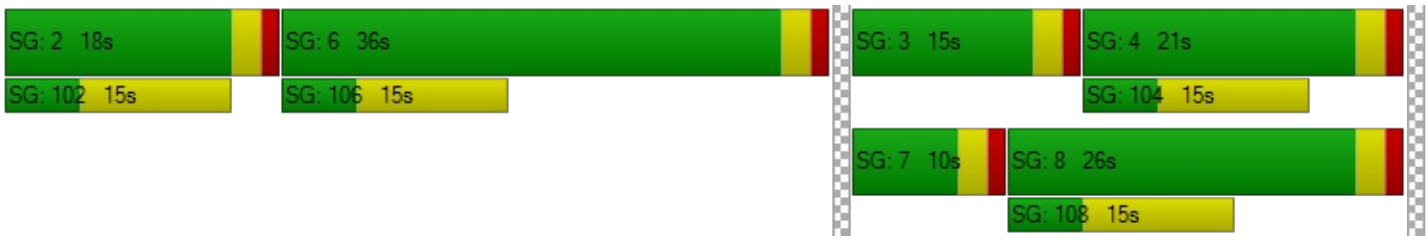
X, volume / capacity	0.67	0.46	0.46	0.32	0.69	0.67	0.47	0.47	0.35	0.04	0.21
d, Delay for Lane Group [s/veh]	51.90	31.52	31.57	45.64	39.20	30.48	24.41	24.39	22.41	31.72	34.19
Lane Group LOS	D	C	C	D	D	C	C	C	C	C	C
Critical Lane Group	yes	no	no	no	yes	yes	no	no	no	no	yes
50th-Percentile Queue Length [veh]	4.01	4.07	4.04	1.10	5.16	7.38	4.99	5.00	3.10	0.22	1.13
50th-Percentile Queue Length [ft]	100.36	101.69	100.98	27.52	128.94	184.38	124.87	125.02	77.47	5.48	28.37
95th-Percentile Queue Length [veh]	7.23	7.32	7.27	1.98	8.88	11.83	8.66	8.67	5.58	0.39	2.04
95th-Percentile Queue Length [ft]	180.64	183.05	181.76	49.53	222.06	295.72	216.50	216.70	139.44	9.86	51.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.90	31.54	31.57	45.64	39.20	30.48	24.40	24.39	22.41	31.72	34.19	34.19
Movement LOS	D	C	C	D	D	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	37.01			35.82			23.91			33.77		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	32.01											
Intersection LOS	C											
Intersection V/C	0.559											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#7: University Pkwy / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	35.3
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.800

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	0	564	363	1203	829	0	71	3	65	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	564	363	1203	829	0	71	3	65	0	0	0
Peak Hour Factor	0.9500	0.9530	0.9530	0.9530	0.9530	0.9500	0.9530	0.9530	0.9530	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	148	95	316	217	0	19	1	17	0	0	0
Total Analysis Volume [veh/h]	0	592	381	1262	870	0	75	3	68	0	0	0
Presence of On-Street Parking			no	no			no		no			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	33	0	39	72	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Minimum Recall		no		no	no			no				
Maximum Recall		no		no	no			no				
Pedestrian Recall		no		no	no			no				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	
g_i, Effective Green Time [s]	30	30	36	69	15	15	
g / C, Green / Cycle	0.33	0.33	0.40	0.77	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.28	0.31	0.39	0.49	0.05	0.05	
s, saturation flow rate [veh/h]	1765	1550	3264	1765	1684	1500	
c, Capacity [veh/h]	588	517	1306	1353	281	250	
d1, Uniform Delay [s]	27.61	29.15	26.41	4.83	32.77	32.73	
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	12.59	27.42	18.11	2.36	2.45	2.67	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

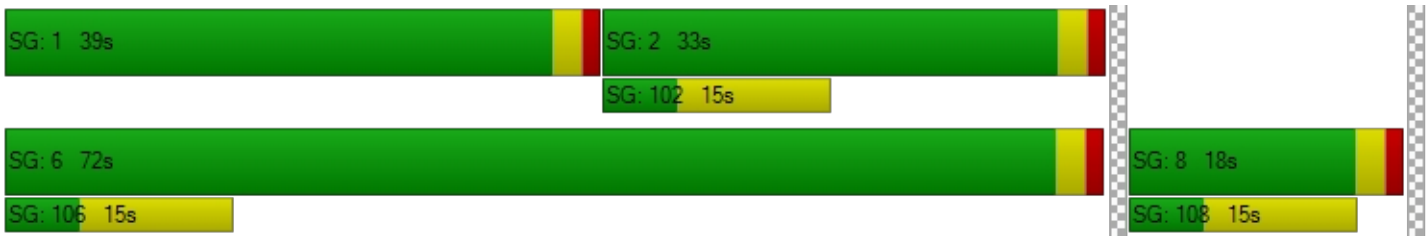
X, volume / capacity	0.83	0.94	0.97	0.64	0.28	0.27	
d, Delay for Lane Group [s/veh]	40.21	56.56	44.52	7.19	35.22	35.40	
Lane Group LOS	D	E	D	A	D	D	
Critical Lane Group	no	yes	yes	no	yes	no	
50th-Percentile Queue Length [veh]	11.32	13.71	15.75	5.95	1.66	1.46	
50th-Percentile Queue Length [ft]	282.88	342.68	393.71	148.71	41.48	36.60	
95th-Percentile Queue Length [veh]	16.83	19.78	22.26	9.95	2.99	2.63	
95th-Percentile Queue Length [ft]	420.80	494.48	556.41	248.70	74.66	65.87	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	43.12	56.56	44.52	7.19	0.00	35.22	35.22	35.40	0.00	0.00	0.00
Movement LOS		D	E	D	A		D	D	D			
d_A, Approach Delay [s/veh]	48.39			29.29			35.30			0.00		
Approach LOS	D			C			D			A		
d_I, Intersection Delay [s/veh]	35.27											
Intersection LOS	D											
Intersection V/C	0.800											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#8: University Pkwy / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	126.4
Analysis Method:	HCM2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.192

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Base Volume Input [veh/h]	44	593	0	0	1611	71	0	0	0	433	10	1808
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	593	0	0	1611	71	0	0	0	433	10	1808
Peak Hour Factor	0.9170	0.9170	0.9500	0.9500	0.9170	0.9170	0.9500	0.9500	0.9500	0.9170	0.9170	0.9170
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	162	0	0	439	19	0	0	0	118	3	493
Total Analysis Volume [veh/h]	48	647	0	0	1757	77	0	0	0	472	11	1972
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	10	51	0	0	41	0	0	0	0	0	79	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no			no						no	
Maximum Recall	no	no			no						no	
Pedestrian Recall	no	no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	R		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	7	48	38	38		76	76
g / C, Green / Cycle	0.05	0.37	0.29	0.29		0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.03	0.19	0.37	0.05		0.29	0.74
s, saturation flow rate [veh/h]	1681	3360	4807	1500		1682	2655
c, Capacity [veh/h]	90	1241	1405	438		984	1552
d1, Uniform Delay [s]	59.90	32.03	46.00	34.32		15.73	27.00
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	20.48	1.57	118.75	0.87		1.75	126.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

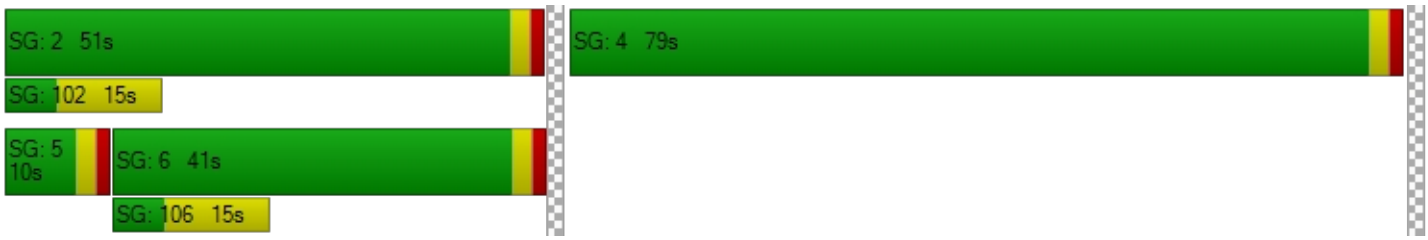
X, volume / capacity	0.53	0.52	1.25	0.18		0.49	1.27
d, Delay for Lane Group [s/veh]	80.38	33.60	164.75	35.19		17.48	153.94
Lane Group LOS	F	C	F	D		B	F
Critical Lane Group	yes	no	yes	no		no	yes
50th-Percentile Queue Length [veh]	2.06	8.24	30.46	1.95		8.69	50.00
50th-Percentile Queue Length [ft]	51.51	206.02	761.38	48.66		217.18	1250.07
95th-Percentile Queue Length [veh]	3.71	12.95	44.91	3.50		13.52	73.42
95th-Percentile Queue Length [ft]	92.72	323.72	1122.70	87.59		338.02	1835.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	80.38	33.60	0.00	0.00	164.75	35.19	0.00	0.00	0.00	17.48	17.48	153.94
Movement LOS	F	C			F	D				B	B	F
d_A, Approach Delay [s/veh]	36.83			159.31			0.00			127.10		
Approach LOS	D			F			A			F		
d_I, Intersection Delay [s/veh]	126.36											
Intersection LOS	F											
Intersection V/C	1.192											

Sequence

Ring 1	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#9: University Pkwy / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	33.5
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.686

Intersection Setup

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Base Volume Input [veh/h]	401	845	288	101	1033	91	112	331	155	215	383	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	401	845	288	101	1033	91	112	331	155	215	383	63
Peak Hour Factor	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	237	81	28	290	26	31	93	43	60	107	18
Total Analysis Volume [veh/h]	450	948	323	113	1159	102	126	371	174	241	430	71
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	42	0	12	34	0	10	24	0	12	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no		no	no		no	no		no	no	
Maximum Recall	no	no		no	no		no	no		no	no	
Pedestrian Recall	no	no		no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	17	39	39	9	31	31	7	21	21	9	23	23
g / C, Green / Cycle	0.19	0.43	0.43	0.10	0.34	0.34	0.08	0.23	0.23	0.10	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.14	0.26	0.26	0.07	0.25	0.25	0.04	0.16	0.16	0.07	0.15	0.15
s, saturation flow rate [veh/h]	3264	3360	1545	1681	3360	1693	3264	1765	1577	3264	1765	1679
c, Capacity [veh/h]	617	1456	670	168	1157	583	254	412	368	326	451	429
d1, Uniform Delay [s]	34.34	19.49	19.52	39.08	25.77	25.77	39.81	31.57	31.64	39.36	29.18	29.19
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.44	1.81	3.94	19.42	3.96	7.65	6.78	9.35	10.70	13.92	5.12	5.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

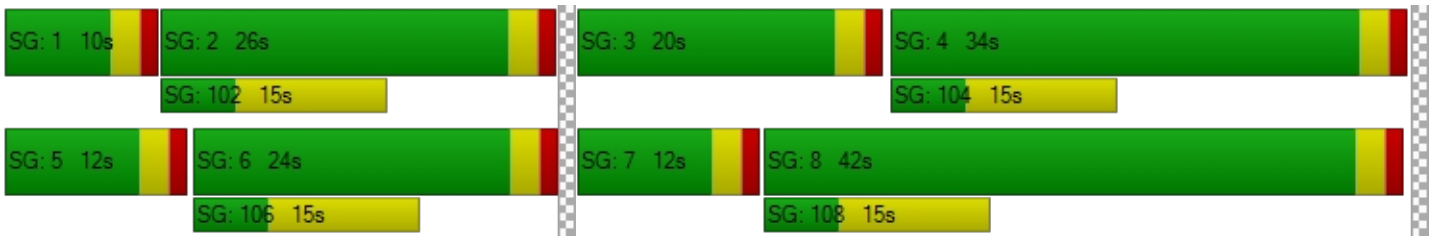
X, volume / capacity	0.73	0.60	0.60	0.67	0.72	0.72	0.50	0.70	0.70	0.74	0.57	0.57
d, Delay for Lane Group [s/veh]	41.78	21.31	23.46	58.50	29.73	33.42	46.59	40.92	42.34	53.28	34.30	34.61
Lane Group LOS	D	C	C	E	C	C	D	D	D	D	C	C
Critical Lane Group	yes	no	no	no	no	yes	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	5.18	6.98	6.85	3.28	8.18	8.84	1.56	6.64	6.13	3.18	5.36	5.15
50th-Percentile Queue Length [ft]	129.40	174.61	171.32	82.07	204.56	221.06	39.03	165.88	153.27	79.58	134.00	128.69
95th-Percentile Queue Length [veh]	8.91	11.32	11.15	5.91	12.87	13.72	2.81	10.86	10.19	5.73	9.16	8.87
95th-Percentile Queue Length [ft]	222.68	282.97	278.64	147.73	321.83	342.97	70.25	271.49	254.79	143.24	228.92	221.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.78	21.49	23.46	58.50	30.75	33.42	46.59	41.24	42.34	53.28	34.43	34.61
Movement LOS	D	C	C	E	C	C	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	27.16			33.23			42.53			40.57		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	33.51											
Intersection LOS	C											
Intersection V/C	0.686											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



IPT I-215 DC II

Vistro File: K:\...\SB I-215 DC II AM.vistro
Report File: K:\...\OY Base AM.pdf

Scenario 2: OY Base AM
4/4/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Palm Ave / Hallmark Pkwy	Two-way stop	HCM2010	EBL	0.013	17.2	C
2	Palm Ave / I-215 SB Ramps	Signalized	HCM2010	EBT	1.032	94.6	F
3	Palm Ave / I-215 NB Ramps	Signalized	HCM2010	WBL	0.461	16.2	B
4	Palm Ave / Kendall Dr	Signalized	HCM2010	NBL	0.677	33.7	C
5	Hallmark Pkwy / Saratoga Way	Two-way stop	HCM2010	EBT	0.000	11.8	B
6	University Pkwy / Hallmark Pkwy	Signalized	HCM2010	NBL	0.444	31.7	C
7	University Pkwy / I-215 SB Ramps	Signalized	HCM2010	NBR	0.704	26.1	C
8	University Pkwy / I-215 NB Ramps	Signalized	HCM2010	SBT	1.114	113.3	F
9	University Pkwy / Kendall Dr	Signalized	HCM2010	WBL	0.622	31.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
#1: Palm Ave / Hallmark Pkwy

Control Type:	Two-way stop	Delay (sec / veh):	17.2
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			yes		

Volumes

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	9	123	1	84	272	1	3	3	2	2	4	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	127	1	87	280	1	3	3	2	2	4	25
Peak Hour Factor	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	38	0	26	85	0	1	1	1	1	1	8
Total Analysis Volume [veh/h]	11	154	1	105	339	1	4	4	2	2	5	30
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.02	0.03
d_M, Delay for Movement [s/veh]	7.98	0.00	0.00	7.73	0.00	0.00	17.17	16.47	10.42	16.56	16.36	9.16
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	A
95th-Percentile Queue Length [veh]	0.03	0.00	0.00	0.24	0.00	0.00	0.09	0.09	0.09	0.02	0.09	0.08
95th-Percentile Queue Length [ft]	0.68	0.00	0.00	5.96	0.00	0.00	2.19	2.19	2.19	0.48	2.28	1.89
d_A, Approach Delay [s/veh]	0.53			1.82			15.54			10.53		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	2.19											
Intersection LOS	C											

Intersection Level Of Service Report
#2: Palm Ave / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	94.6
Analysis Method:	HCM2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.032

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	24	108	47	723	276	73	33	70	28	87	1	278
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	111	48	745	284	75	34	72	29	90	1	286
Peak Hour Factor	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	33	14	221	84	22	10	21	9	27	0	85
Total Analysis Volume [veh/h]	30	132	57	883	336	89	40	85	34	107	1	339
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	15	0	63	68	0	0	15	0	0	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no			no			no	
Maximum Recall	no	no		no	no			no			no	
Pedestrian Recall	no	no		no	no			no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	7	12	12	60	65	65	12	34
g / C, Green / Cycle	0.05	0.09	0.09	0.46	0.50	0.50	0.09	0.26
(v / s)_i Volume / Saturation Flow Rate	0.02	0.05	0.06	0.53	0.12	0.13	0.09	0.29
s, saturation flow rate [veh/h]	1681	1765	1592	1681	1765	1639	1680	1540
c, Capacity [veh/h]	90	163	147	776	882	820	155	403
d1, Uniform Delay [s]	59.25	56.65	56.86	35.00	18.56	18.58	59.00	48.00
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.56	14.86	18.72	77.57	0.67	0.73	79.06	77.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

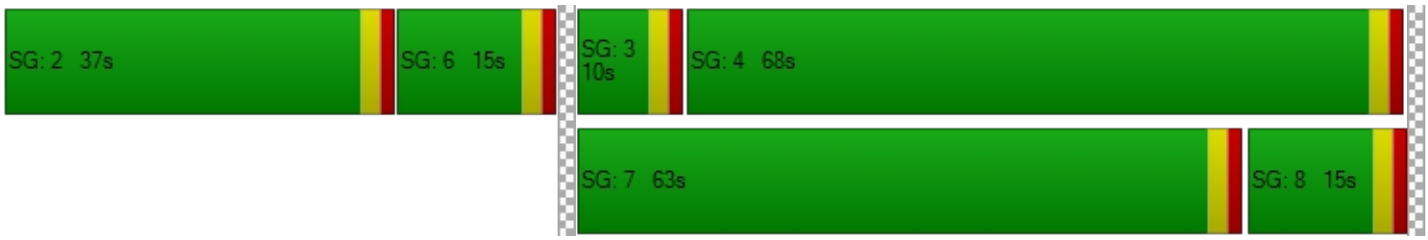
X, volume / capacity	0.33	0.59	0.63	1.14	0.25	0.25	1.03	1.11
d, Delay for Lane Group [s/veh]	68.81	71.51	75.58	112.57	19.23	19.31	138.06	125.98
Lane Group LOS	E	E	E	F	B	B	F	F
Critical Lane Group	no	no	yes	yes	no	no	yes	yes
50th-Percentile Queue Length [veh]	1.20	3.72	3.70	40.57	3.97	3.73	8.51	21.70
50th-Percentile Queue Length [ft]	29.90	93.11	92.48	1014.28	99.17	93.33	212.84	542.46
95th-Percentile Queue Length [veh]	2.15	6.70	6.66	56.15	7.14	6.72	13.43	31.19
95th-Percentile Queue Length [ft]	53.81	167.59	166.47	1403.76	178.51	167.99	335.70	779.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	68.81	72.60	75.58	112.57	19.26	19.31	138.06	138.06	138.06	125.98	125.98	125.98
Movement LOS	E	E	E	F	B	B	F	F	F	F	F	F
d_A, Approach Delay [s/veh]	72.86			82.26			138.06			125.98		
Approach LOS	E			F			F			F		
d_I, Intersection Delay [s/veh]	94.62											
Intersection LOS	F											
Intersection V/C	1.032											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#3: Palm Ave / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	16.2
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.461

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Right	Right	Left	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	29	390	0	0	921	331	0	0	0	152	1	385
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.00	1.03	1.03	1.00	1.00	1.00	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	402	0	0	949	341	0	0	0	157	1	397
Peak Hour Factor	0.9080	0.9080	0.9500	0.9500	0.9080	0.9080	0.9500	0.9500	0.9500	0.9080	0.9080	0.9080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	111	0	0	261	94	0	0	0	43	0	109
Total Analysis Volume [veh/h]	33	443	0	0	1045	376	0	0	0	173	1	437
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	0	8	0	0	4	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	Lag	-
Minimum Green [s]	0	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	56	0	0	56	0	0	0	0	0	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall		no			no						no	
Maximum Recall		no			no						no	
Pedestrian Recall		no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	C	C		L
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00		0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00
g_i, Effective Green Time [s]	53	53	53	53		31
g / C, Green / Cycle	0.59	0.59	0.59	0.59		0.34
(v / s)_i Volume / Saturation Flow Rate	0.23	0.21	0.40	0.44		0.00
s, saturation flow rate [veh/h]	596	1606	1765	1614		1681
c, Capacity [veh/h]	401	946	1039	950		579
d1, Uniform Delay [s]	12.25	9.64	12.73	13.59		19.35
k, delay calibration	0.50	0.50	0.50	0.50		0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00
d2, Incremental Delay [s]	2.32	1.06	3.65	5.36		0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00

Lane Group Results

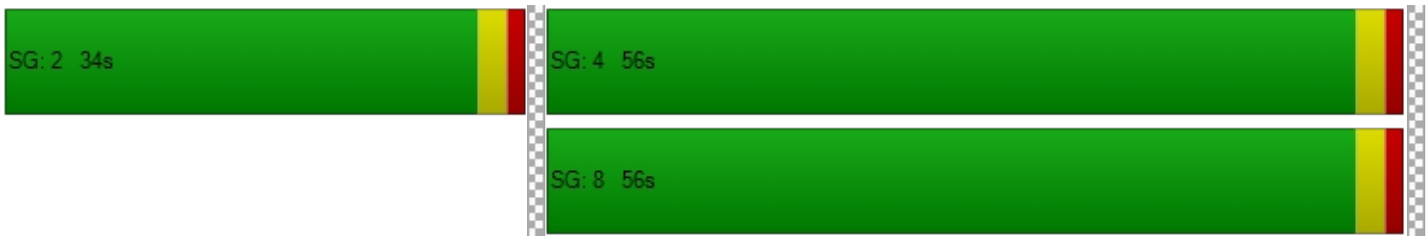
X, volume / capacity	0.34	0.36	0.68	0.75		0.00
d, Delay for Lane Group [s/veh]	14.57	10.70	16.38	18.94		19.36
Lane Group LOS	B	B	B	B		B
Critical Lane Group	no	no	no	yes		yes
50th-Percentile Queue Length [veh]	1.37	3.45	9.85	10.80		0.01
50th-Percentile Queue Length [ft]	34.14	86.32	246.18	269.95		0.36
95th-Percentile Queue Length [veh]	2.46	6.21	14.99	16.19		0.03
95th-Percentile Queue Length [ft]	61.45	155.37	374.84	404.68		0.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.57	11.61	0.00	0.00	17.20	18.94	0.00	0.00	0.00	0.00	19.36	0.00
Movement LOS	B	B			B	B					B	
d_A, Approach Delay [s/veh]	11.81			17.66			0.00			19.36		
Approach LOS	B			B			A			B		
d_I, Intersection Delay [s/veh]	16.20											
Intersection LOS	B											
Intersection V/C	0.461											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#4: Palm Ave / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	33.7
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.677

Intersection Setup

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Base Volume Input [veh/h]	121	343	311	141	757	71	25	75	160	323	97	154
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	353	320	145	780	73	26	77	165	333	100	159
Peak Hour Factor	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	102	93	42	226	21	8	22	48	97	29	46
Total Analysis Volume [veh/h]	145	410	371	168	905	85	30	89	191	386	116	184
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	30	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	37	37	16	39	0	10	19	0	18	27	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no	no	no	no		no	no		no	no	
Maximum Recall	no	no	no	no	no		no	no		no	no	
Pedestrian Recall	no	no	no	no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	11	34	34	13	36	36	7	16	16	15	24	24
g / C, Green / Cycle	0.12	0.38	0.38	0.14	0.40	0.40	0.08	0.18	0.18	0.17	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.09	0.12	0.25	0.10	0.28	0.28	0.02	0.05	0.13	0.12	0.07	0.12
s, saturation flow rate [veh/h]	1681	3360	1500	1681	1765	1712	1681	1765	1500	3264	1765	1500
c, Capacity [veh/h]	205	1269	567	243	706	685	131	314	267	544	471	400
d1, Uniform Delay [s]	37.95	19.84	23.15	36.60	22.64	22.65	38.97	32.04	34.86	35.44	25.90	27.58
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	18.46	0.68	5.81	15.03	6.01	6.21	4.05	2.26	15.22	7.64	1.25	3.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.71	0.32	0.65	0.69	0.71	0.71	0.23	0.28	0.72	0.71	0.25	0.46
d, Delay for Lane Group [s/veh]	56.40	20.52	28.95	51.63	28.65	28.86	43.02	34.29	50.08	43.08	27.15	31.36
Lane Group LOS	E	C	C	D	C	C	D	C	D	D	C	C
Critical Lane Group	yes	no	no	no	no	yes	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	4.08	3.08	7.16	4.47	9.68	9.45	0.76	1.85	5.00	4.51	2.08	3.66
50th-Percentile Queue Length [ft]	101.95	76.94	178.99	111.69	242.10	236.13	19.08	46.32	124.88	112.65	52.03	91.49
95th-Percentile Queue Length [veh]	7.34	5.54	11.55	7.93	14.79	14.49	1.37	3.34	8.66	7.99	3.75	6.59
95th-Percentile Queue Length [ft]	183.50	138.50	288.70	198.35	369.69	362.14	34.35	83.38	216.52	199.68	93.65	164.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.40	20.52	28.95	51.63	28.75	28.86	43.02	34.29	50.08	43.08	27.15	31.36
Movement LOS	E	C	C	D	C	C	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	29.52			32.08			44.87			37.24		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	33.74											
Intersection LOS	C											
Intersection V/C	0.677											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#5: Hallmark Pkwy / Saratoga Way

Control Type:	Two-way stop	Delay (sec / veh):	11.8
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Base Volume Input [veh/h]	12	188	10	2	122	4	0	0	9	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	194	10	2	126	4	0	0	9	2	0	0
Peak Hour Factor	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	54	3	1	35	1	0	0	3	1	0	0
Total Analysis Volume [veh/h]	13	216	11	2	140	4	0	0	10	2	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.53	0.00	0.00	7.69	0.00	0.00	10.62	11.81	8.73	11.05	11.76	8.94
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh]	0.03	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03	0.01	0.01	0.01
95th-Percentile Queue Length [ft]	0.69	0.00	0.00	0.11	0.00	0.00	0.78	0.78	0.78	0.25	0.25	0.25
d_A, Approach Delay [s/veh]	0.41			0.11			8.73			11.05		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	0.56											
Intersection LOS	B											

Intersection Level Of Service Report
#6: University Pkwy / Hallmark Pkwy

Control Type:	Signalized	Delay (sec / veh):	31.7
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.444

Intersection Setup

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	79	419	4	17	347	299	211	6	37	4	3	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	81	432	4	18	357	308	217	6	38	4	3	24
Peak Hour Factor	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	116	1	5	96	82	58	2	10	1	1	6
Total Analysis Volume [veh/h]	87	463	4	19	382	330	232	6	41	4	3	26
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	6	0	6	0	0	2	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	7	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	30	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	23	0	10	21	39	0	39	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	10	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no	no		no			no	
Maximum Recall	no	no		no	no	no		no			no	
Pedestrian Recall	no	no		no	no	no		no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	9	20	20	7	18	36	36	36	36	15	15
g / C, Green / Cycle	0.10	0.22	0.22	0.08	0.20	0.40	0.40	0.40	0.40	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.13	0.01	0.11	0.22	0.07	0.07	0.03	0.00	0.02
s, saturation flow rate [veh/h]	1681	1765	1759	1681	3360	1500	1681	1685	1500	1681	1524
c, Capacity [veh/h]	168	392	391	131	672	600	672	674	600	280	254
d1, Uniform Delay [s]	38.44	31.38	31.38	38.71	32.49	20.77	17.43	17.43	16.66	31.32	31.86
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.94	6.54	6.57	2.33	3.47	3.60	0.57	0.57	0.22	0.09	0.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.60	0.60	0.15	0.57	0.55	0.18	0.18	0.07	0.01	0.11
d, Delay for Lane Group [s/veh]	49.38	37.92	37.95	41.04	35.96	24.37	18.01	18.01	16.88	31.42	32.77
Lane Group LOS	D	D	D	D	D	C	B	B	B	C	C
Critical Lane Group	yes	no	no	no	yes	yes	no	no	no	no	yes
50th-Percentile Queue Length [veh]	2.31	5.18	5.17	0.47	4.01	5.73	1.66	1.66	0.55	0.08	0.59
50th-Percentile Queue Length [ft]	57.76	129.38	129.14	11.80	100.30	143.16	41.43	41.51	13.68	1.98	14.87
95th-Percentile Queue Length [veh]	4.16	8.91	8.89	0.85	7.22	9.65	2.98	2.99	0.99	0.14	1.07
95th-Percentile Queue Length [ft]	103.98	222.65	222.32	21.25	180.54	241.27	74.58	74.71	24.63	3.56	26.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.38	37.93	37.95	41.04	35.96	24.37	18.01	18.01	16.88	31.42	32.77	32.77
Movement LOS	D	D	D	D	D	C	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	39.73			30.86			17.84			32.60		
Approach LOS	D			C			B			C		
d_I, Intersection Delay [s/veh]	31.70											
Intersection LOS	C											
Intersection V/C	0.444											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#7: University Pkwy / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	26.1
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	0	374	291	1067	614	0	60	4	72	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.00	1.03	1.03	1.03	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	385	300	1099	632	0	62	4	74	0	0	0
Peak Hour Factor	0.9500	0.9280	0.9280	0.9280	0.9280	0.9500	0.9280	0.9280	0.9280	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	104	81	296	170	0	17	1	20	0	0	0
Total Analysis Volume [veh/h]	0	415	323	1184	681	0	67	4	80	0	0	0
Presence of On-Street Parking			no	no			no		no			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	30	0	42	72	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Minimum Recall		no		no	no			no				
Maximum Recall		no		no	no			no				
Pedestrian Recall		no		no	no			no				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	
g_i, Effective Green Time [s]	27	27	39	69	15	15	
g / C, Green / Cycle	0.30	0.30	0.43	0.77	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.21	0.24	0.36	0.39	0.04	0.05	
s, saturation flow rate [veh/h]	1765	1529	3264	1765	1685	1500	
c, Capacity [veh/h]	529	459	1414	1353	281	250	
d1, Uniform Delay [s]	27.88	29.07	22.68	3.99	32.62	33.01	
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	7.42	13.95	6.04	1.34	2.15	3.35	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

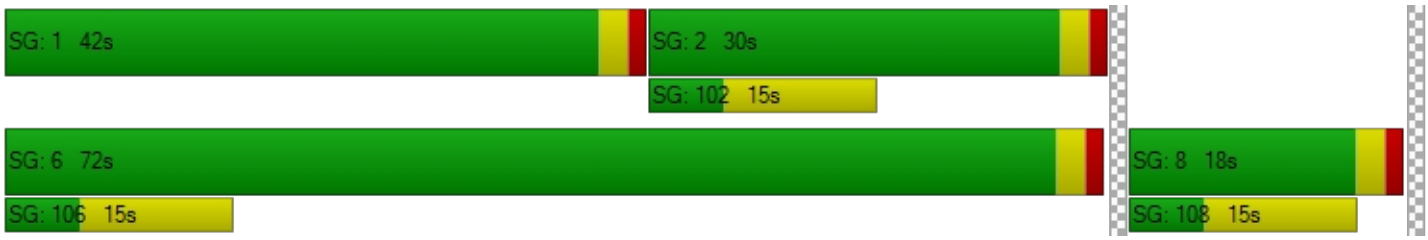
X, volume / capacity	0.70	0.80	0.84	0.50	0.25	0.32	
d, Delay for Lane Group [s/veh]	35.30	43.02	28.72	5.33	34.78	36.36	
Lane Group LOS	D	D	C	A	C	D	
Critical Lane Group	no	yes	yes	no	no	yes	
50th-Percentile Queue Length [veh]	7.91	8.89	11.67	3.77	1.50	1.75	
50th-Percentile Queue Length [ft]	197.75	222.17	291.72	94.35	37.46	43.74	
95th-Percentile Queue Length [veh]	12.52	13.78	17.27	6.79	2.70	3.15	
95th-Percentile Queue Length [ft]	313.06	344.40	431.77	169.84	67.43	78.73	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	36.15	43.02	28.72	5.33	0.00	34.78	34.78	36.36	0.00	0.00	0.00
Movement LOS		D	D	C	A		C	C	D			
d_A, Approach Delay [s/veh]	39.16			20.18			35.62			0.00		
Approach LOS	D			C			D			A		
d_I, Intersection Delay [s/veh]	26.11											
Intersection LOS	C											
Intersection V/C	0.704											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#8: University Pkwy / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	113.3
Analysis Method:	HCM2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.114

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Base Volume Input [veh/h]	29	428	0	0	1299	71	0	0	0	323	5	1565
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.00	1.03	1.03	1.00	1.00	1.00	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	441	0	0	1338	73	0	0	0	333	5	1612
Peak Hour Factor	0.8690	0.8690	0.9500	0.9500	0.8690	0.8690	0.9500	0.9500	0.9500	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	127	0	0	385	21	0	0	0	96	1	464
Total Analysis Volume [veh/h]	35	507	0	0	1540	84	0	0	0	383	6	1855
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	10	36	0	0	26	0	0	0	0	0	54	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no			no						no	
Maximum Recall	no	no			no						no	
Pedestrian Recall	no	no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	R		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	7	33	23	23		51	51
g / C, Green / Cycle	0.08	0.37	0.26	0.26		0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.02	0.15	0.32	0.06		0.23	0.70
s, saturation flow rate [veh/h]	1681	3360	4807	1500		1682	2655
c, Capacity [veh/h]	131	1232	1228	383		953	1504
d1, Uniform Delay [s]	39.09	21.26	33.50	26.42		10.99	19.50
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	4.96	1.02	120.95	1.31		1.30	110.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.41	1.25	0.22		0.41	1.23
d, Delay for Lane Group [s/veh]	44.05	22.28	154.45	27.73		12.29	130.33
Lane Group LOS	D	C	F	C		B	F
Critical Lane Group	yes	no	yes	no		no	yes
50th-Percentile Queue Length [veh]	0.90	4.04	22.41	1.54		4.37	36.96
50th-Percentile Queue Length [ft]	22.53	101.00	560.21	38.48		109.14	923.93
95th-Percentile Queue Length [veh]	1.62	7.27	34.01	2.77		7.79	54.64
95th-Percentile Queue Length [ft]	40.55	181.80	850.28	69.26		194.81	1365.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.05	22.28	0.00	0.00	154.45	27.73	0.00	0.00	0.00	12.29	12.29	130.33
Movement LOS	D	C			F	C				B	B	F
d_A, Approach Delay [s/veh]	23.68			147.90			0.00			109.86		
Approach LOS	C			F			A			F		
d_I, Intersection Delay [s/veh]	113.28											
Intersection LOS	F											
Intersection V/C	1.114											

Sequence

Ring 1	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#9: University Pkwy / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	31.3
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.622

Intersection Setup

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Base Volume Input [veh/h]	92	1207	104	24	276	66	177	368	174	233	274	85
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	95	1243	107	25	284	68	182	379	179	240	282	88
Peak Hour Factor	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	337	29	7	77	18	49	103	48	65	76	24
Total Analysis Volume [veh/h]	103	1347	116	27	308	74	197	411	194	260	306	95
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	10	39	0	13	27	0	14	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no		no	no		no	no		no	no	
Maximum Recall	no	no		no	no		no	no		no	no	
Pedestrian Recall	no	no		no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	7	36	36	7	36	36	10	24	24	11	25	25
g / C, Green / Cycle	0.08	0.40	0.40	0.08	0.40	0.40	0.11	0.27	0.27	0.12	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.03	0.29	0.29	0.02	0.08	0.08	0.06	0.18	0.18	0.08	0.12	0.12
s, saturation flow rate [veh/h]	3264	3360	1694	1681	3360	1601	3264	1765	1576	3264	1765	1624
c, Capacity [veh/h]	254	1344	678	131	1344	640	363	471	420	399	490	451
d1, Uniform Delay [s]	39.52	22.80	22.80	38.90	17.53	17.60	37.84	29.54	29.56	37.67	26.61	26.64
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.76	3.41	6.61	3.55	0.31	0.70	5.74	7.65	8.60	8.03	2.68	2.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

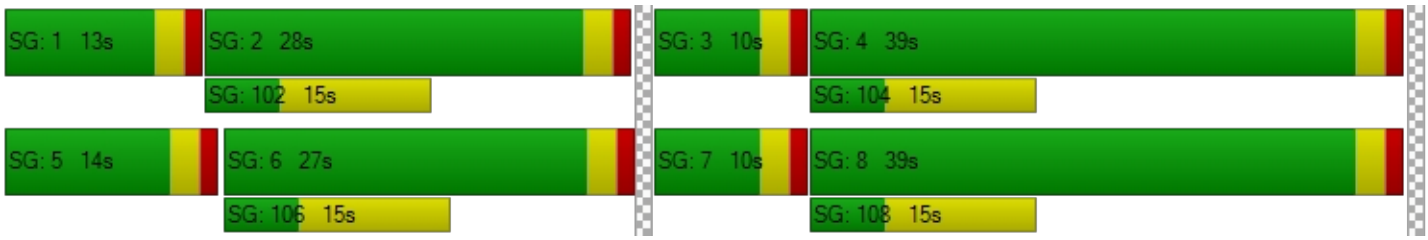
X, volume / capacity	0.41	0.72	0.72	0.21	0.19	0.20	0.54	0.68	0.68	0.65	0.42	0.43
d, Delay for Lane Group [s/veh]	44.28	26.21	29.41	42.45	17.84	18.30	43.58	37.19	38.16	45.71	29.29	29.59
Lane Group LOS	D	C	C	D	B	B	D	D	D	D	C	C
Critical Lane Group	no	no	yes	yes	no	no	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	1.24	8.93	9.61	0.68	1.73	1.80	2.32	7.02	6.40	3.14	3.94	3.69
50th-Percentile Queue Length [ft]	31.01	223.22	240.19	17.06	43.18	45.03	57.91	175.45	160.00	78.43	98.56	92.31
95th-Percentile Queue Length [veh]	2.23	13.83	14.69	1.23	3.11	3.24	4.17	11.36	10.55	5.65	7.10	6.65
95th-Percentile Queue Length [ft]	55.82	345.73	367.27	30.71	77.72	81.06	104.24	284.07	263.72	141.18	177.41	166.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.28	27.10	29.41	42.45	17.92	18.30	43.58	37.41	38.16	45.71	29.38	29.59
Movement LOS	D	C	C	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	28.40			19.61			39.11			35.83		
Approach LOS	C			B			D			D		
d_I, Intersection Delay [s/veh]	31.28											
Intersection LOS	C											
Intersection V/C	0.622											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



IPT I-215 DC II

Vistro File: K:\...\SB I-215 DC II PM.vistro
Report File: K:\...\OY Base PM.pdf

Scenario 2: OY Base PM
4/4/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Palm Ave / Hallmark Pkwy	Two-way stop	HCM2010	EBL	0.000	15.3	C
2	Palm Ave / I-215 SB Ramps	Signalized	HCM2010	NBR	0.647	37.9	D
3	Palm Ave / I-215 NB Ramps	Signalized	HCM2010	WBR	0.715	24.0	C
4	Palm Ave / Kendall Dr	Signalized	HCM2010	SBL	0.597	31.4	C
5	Hallmark Pkwy / Saratoga Way	Two-way stop	HCM2010	EBT	0.000	15.1	C
6	University Pkwy / Hallmark Pkwy	Signalized	HCM2010	NBL	0.576	32.5	C
7	University Pkwy / I-215 SB Ramps	Signalized	HCM2010	NBR	0.824	39.0	D
8	University Pkwy / I-215 NB Ramps	Signalized	HCM2010	SBT	1.227	138.7	F
9	University Pkwy / Kendall Dr	Signalized	HCM2010	SBL	0.707	34.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
#1: Palm Ave / Hallmark Pkwy

Control Type:	Two-way stop	Delay (sec / veh):	15.3
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			yes		

Volumes

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	1	201	9	71	87	2	0	3	1	5	3	146
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	207	9	73	90	2	0	3	1	5	3	150
Peak Hour Factor	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	59	3	21	26	1	0	1	0	1	1	43
Total Analysis Volume [veh/h]	1	236	10	83	103	2	0	3	1	6	3	171
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.21
d_M, Delay for Movement [s/veh]	7.42	0.00	0.00	7.91	0.00	0.00	15.31	13.37	8.84	13.14	13.81	10.04
Movement LOS	A	A	A	A	A	A	C	B	A	B	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.20	0.00	0.00	0.02	0.02	0.02	0.04	0.37	0.37
95th-Percentile Queue Length [ft]	0.05	0.00	0.00	5.03	0.00	0.00	0.60	0.60	0.60	1.02	9.37	9.22
d_A, Approach Delay [s/veh]	0.03			3.49			12.24			10.21		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	4.12											
Intersection LOS	C											

Intersection Level Of Service Report
#2: Palm Ave / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	37.9
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.647

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	15	222	129	317	124	83	42	52	20	23	6	231
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	229	133	327	128	85	43	54	21	24	6	238
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	61	35	87	34	23	11	14	6	6	2	63
Total Analysis Volume [veh/h]	16	244	142	349	136	91	46	58	22	26	6	254
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	19	0	29	38	0	0	15	0	0	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no			no			no	
Maximum Recall	no	no		no	no			no			no	
Pedestrian Recall	no	no		no	no			no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	7	16	16	26	35	35	12	24
g / C, Green / Cycle	0.08	0.18	0.18	0.29	0.39	0.39	0.13	0.27
(v / s)_i Volume / Saturation Flow Rate	0.01	0.11	0.12	0.21	0.07	0.07	0.07	0.19
s, saturation flow rate [veh/h]	1681	1765	1554	1681	1765	1534	1682	1520
c, Capacity [veh/h]	131	314	276	486	686	597	224	405
d1, Uniform Delay [s]	38.64	34.34	34.53	28.72	18.03	18.06	36.54	29.81
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.91	9.68	12.17	8.86	0.56	0.66	9.80	9.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

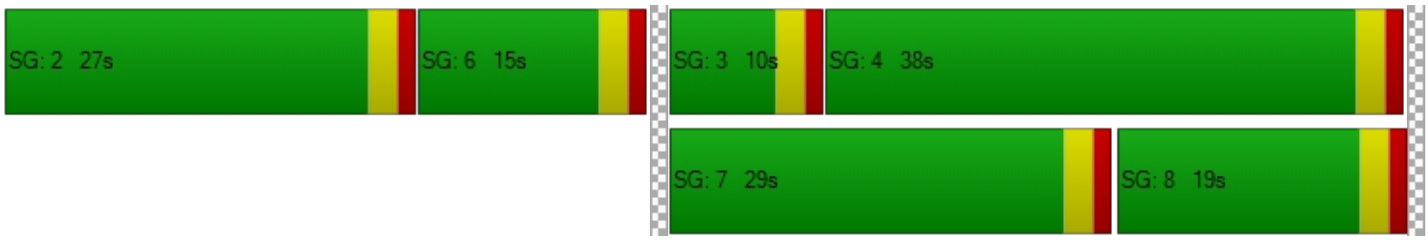
X, volume / capacity	0.12	0.64	0.67	0.72	0.18	0.18	0.56	0.71
d, Delay for Lane Group [s/veh]	40.55	44.02	46.70	37.58	18.59	18.72	46.34	39.72
Lane Group LOS	D	D	D	D	B	B	D	D
Critical Lane Group	no	no	yes	yes	no	no	yes	yes
50th-Percentile Queue Length [veh]	0.40	4.86	4.64	7.75	1.70	1.53	3.17	6.56
50th-Percentile Queue Length [ft]	9.88	121.42	116.00	193.87	42.61	38.29	79.22	163.96
95th-Percentile Queue Length [veh]	0.71	8.47	8.17	12.32	3.07	2.76	5.70	10.76
95th-Percentile Queue Length [ft]	17.79	211.78	204.31	308.04	76.70	68.92	142.60	268.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.55	44.49	46.70	37.58	18.61	18.72	46.34	46.34	46.34	39.72	39.72	39.72
Movement LOS	D	D	D	D	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	45.11			30.12			46.34			39.72		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	37.90											
Intersection LOS	D											
Intersection V/C	0.647											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#3: Palm Ave / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.0
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.715

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	60	441	0	0	438	376	0	0	0	102	3	552
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.00	1.03	1.03	1.00	1.00	1.00	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	62	454	0	0	451	387	0	0	0	105	3	569
Peak Hour Factor	0.9590	0.9590	0.9500	0.9500	0.9590	0.9590	0.9500	0.9500	0.9500	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	118	0	0	118	101	0	0	0	27	1	148
Total Analysis Volume [veh/h]	65	473	0	0	470	404	0	0	0	109	3	593
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	44	0	0	44	0	0	0	0	0	46	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall		no			no						no	
Maximum Recall		no			no						no	
Pedestrian Recall		no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	C	C		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	41	41	41	41		43	43
g / C, Green / Cycle	0.46	0.46	0.46	0.46		0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.26	0.24	0.25	0.29		0.07	0.40
s, saturation flow rate [veh/h]	577	1606	1765	1517		1683	1500
c, Capacity [veh/h]	320	732	804	691		804	717
d1, Uniform Delay [s]	22.43	17.59	17.73	18.74		13.15	20.30
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	4.86	2.74	2.63	4.36		0.36	10.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.53	0.54	0.63		0.14	0.83
d, Delay for Lane Group [s/veh]	27.29	20.33	20.36	23.10		13.51	30.89
Lane Group LOS	C	C	C	C		B	C
Critical Lane Group	no	no	no	yes		no	yes
50th-Percentile Queue Length [veh]	3.17	6.04	6.82	7.42		1.30	12.08
50th-Percentile Queue Length [ft]	79.36	151.03	170.46	185.54		32.53	302.12
95th-Percentile Queue Length [veh]	5.71	10.07	11.10	11.89		2.34	17.79
95th-Percentile Queue Length [ft]	142.84	251.80	277.52	297.24		58.56	444.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.29	21.58	0.00	0.00	20.55	23.10	0.00	0.00	0.00	13.51	13.51	30.89
Movement LOS	C	C			C	C				B	B	C
d_A, Approach Delay [s/veh]	22.27			21.73			0.00			28.13		
Approach LOS	C			C			A			C		
d_I, Intersection Delay [s/veh]	24.00											
Intersection LOS	C											
Intersection V/C	0.715											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#4: Palm Ave / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	31.4
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.597

Intersection Setup

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Base Volume Input [veh/h]	183	476	332	92	260	34	45	64	125	420	110	157
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	188	490	342	95	268	35	46	66	129	433	113	162
Peak Hour Factor	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	132	92	26	72	9	12	18	35	117	31	44
Total Analysis Volume [veh/h]	203	530	370	103	290	38	50	71	139	468	122	175
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	30	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	37	37	12	26	0	10	18	0	23	31	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no	no	no	no		no	no		no	no	
Maximum Recall	no	no	no	no	no		no	no		no	no	
Pedestrian Recall	no	no	no	no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	20	34	34	9	23	23	7	15	15	20	28	28
g / C, Green / Cycle	0.22	0.38	0.38	0.10	0.26	0.26	0.08	0.17	0.17	0.22	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.12	0.16	0.25	0.06	0.09	0.10	0.03	0.04	0.09	0.14	0.07	0.12
s, saturation flow rate [veh/h]	1681	3360	1500	1681	1765	1694	1681	1765	1500	3264	1765	1500
c, Capacity [veh/h]	373	1269	567	168	451	433	131	294	250	725	549	467
d1, Uniform Delay [s]	30.96	20.69	23.13	38.83	27.53	27.57	39.45	32.56	34.44	31.78	22.94	24.18
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.59	1.01	5.76	15.56	2.31	2.46	8.28	1.94	8.64	4.39	0.93	2.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

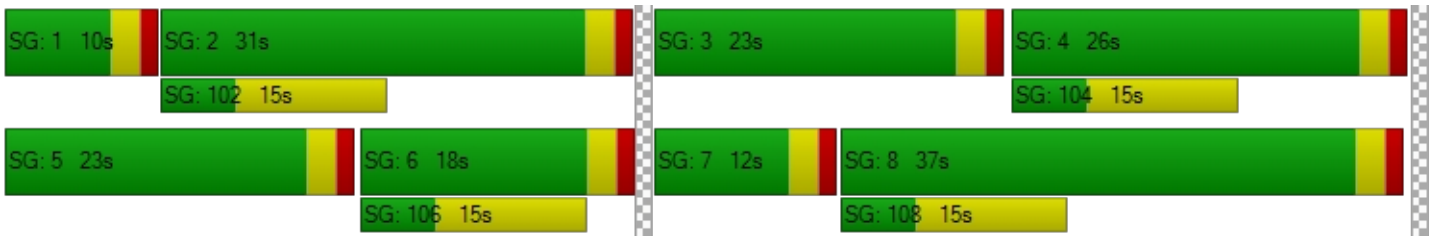
X, volume / capacity	0.54	0.42	0.65	0.61	0.37	0.37	0.38	0.24	0.56	0.65	0.22	0.38
d, Delay for Lane Group [s/veh]	36.55	21.70	28.89	54.39	29.85	30.03	47.73	34.50	43.08	36.17	23.88	26.47
Lane Group LOS	D	C	C	D	C	C	D	C	D	D	C	C
Critical Lane Group	no	no	yes	yes	no	no	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	4.40	4.17	7.13	2.88	3.18	3.11	1.34	1.49	3.35	4.97	2.02	3.14
50th-Percentile Queue Length [ft]	110.08	104.13	178.27	71.97	79.44	77.66	33.51	37.15	83.75	124.16	50.54	78.45
95th-Percentile Queue Length [veh]	7.84	7.50	11.51	5.18	5.72	5.59	2.41	2.67	6.03	8.62	3.64	5.65
95th-Percentile Queue Length [ft]	196.11	187.44	287.75	129.55	142.99	139.79	60.31	66.87	150.75	215.53	90.97	141.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.55	21.70	28.89	54.39	29.92	30.03	47.73	34.50	43.08	36.17	23.88	26.47
Movement LOS	D	C	C	D	C	C	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	26.84			35.78			41.63			31.99		
Approach LOS	C			D			D			C		
d_I, Intersection Delay [s/veh]	31.39											
Intersection LOS	C											
Intersection V/C	0.597											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#5: Hallmark Pkwy / Saratoga Way

Control Type:	Two-way stop	Delay (sec / veh):	15.1
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Base Volume Input [veh/h]	31	178	0	0	290	8	10	0	58	9	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	183	0	0	299	8	10	0	60	9	0	0
Peak Hour Factor	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	53	0	0	87	2	3	0	17	3	0	0
Total Analysis Volume [veh/h]	37	212	0	0	346	9	12	0	69	10	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.08	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	8.09	0.00	0.00	7.66	0.00	0.00	14.16	15.05	9.93	13.48	14.69	9.07
Movement LOS	A	A	A	A	A	A	B	C	A	B	B	A
95th-Percentile Queue Length [veh]	0.10	0.00	0.00	0.00	0.00	0.00	0.37	0.37	0.37	0.07	0.07	0.07
95th-Percentile Queue Length [ft]	2.38	0.00	0.00	0.00	0.00	0.00	9.33	9.33	9.33	1.76	1.76	1.76
d_A, Approach Delay [s/veh]	1.20			0.00			10.56			13.48		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	1.86											
Intersection LOS	C											

Intersection Level Of Service Report
#6: University Pkwy / Hallmark Pkwy

Control Type:	Signalized	Delay (sec / veh):	32.5
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.576

Intersection Setup

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	142	376	11	40	440	351	536	14	181	10	12	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	387	11	41	453	362	552	14	186	10	12	40
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	102	3	11	120	96	146	4	49	3	3	11
Total Analysis Volume [veh/h]	154	409	12	43	479	383	584	15	197	11	13	42
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	6	0	6	0	0	2	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	7	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	30	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	15	26	0	10	21	36	0	36	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	10	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no	no		no			no	
Maximum Recall	no	no		no	no	no		no			no	
Pedestrian Recall	no	no		no	no	no		no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	12	23	23	7	18	33	33	33	33	15	15
g / C, Green / Cycle	0.13	0.26	0.26	0.08	0.20	0.37	0.37	0.37	0.37	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.09	0.12	0.12	0.03	0.14	0.26	0.18	0.18	0.13	0.01	0.04
s, saturation flow rate [veh/h]	1681	1765	1747	1681	3360	1500	1681	1685	1500	1681	1555
c, Capacity [veh/h]	224	451	446	131	672	550	616	618	550	280	259
d1, Uniform Delay [s]	37.21	28.33	28.34	39.28	33.59	24.24	21.96	21.96	20.78	31.46	32.40
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.86	3.47	3.52	6.61	6.34	7.13	2.73	2.71	1.82	0.26	1.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

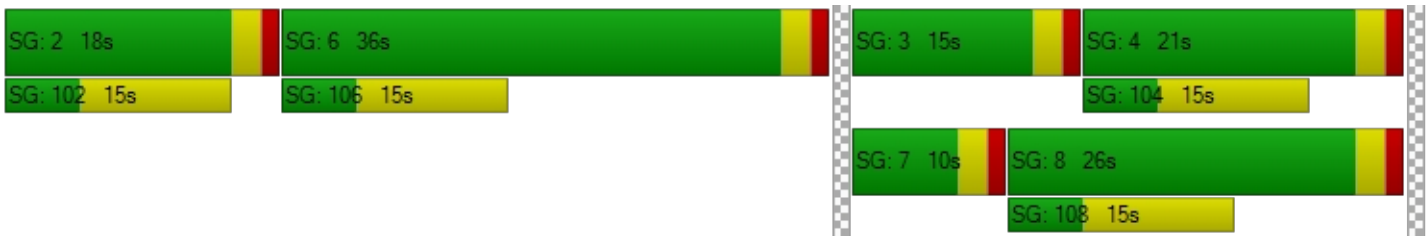
X, volume / capacity	0.69	0.47	0.47	0.33	0.71	0.70	0.49	0.49	0.36	0.04	0.21
d, Delay for Lane Group [s/veh]	53.07	31.80	31.86	45.88	39.93	31.37	24.69	24.67	22.59	31.72	34.26
Lane Group LOS	D	C	C	D	D	C	C	C	C	C	C
Critical Lane Group	yes	no	no	no	yes	yes	no	no	no	no	yes
50th-Percentile Queue Length [veh]	4.17	4.21	4.18	1.13	5.37	7.75	5.18	5.19	3.21	0.22	1.16
50th-Percentile Queue Length [ft]	104.29	105.29	104.56	28.25	134.31	193.75	129.54	129.67	80.35	5.48	28.93
95th-Percentile Queue Length [veh]	7.51	7.58	7.53	2.03	9.17	12.32	8.91	8.92	5.79	0.39	2.08
95th-Percentile Queue Length [ft]	187.72	189.43	188.20	50.85	229.34	307.88	222.87	223.04	144.63	9.86	52.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.07	31.83	31.86	45.88	39.93	31.37	24.68	24.67	22.59	31.72	34.26	34.26
Movement LOS	D	C	C	D	D	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	37.52			36.59			24.16			33.83		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	32.52											
Intersection LOS	C											
Intersection V/C	0.576											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#7: University Pkwy / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	39.0
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.824

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	0	564	363	1203	829	0	71	3	65	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.00	1.03	1.03	1.03	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	581	374	1239	854	0	73	3	67	0	0	0
Peak Hour Factor	0.9500	0.9530	0.9530	0.9530	0.9530	0.9500	0.9530	0.9530	0.9530	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	152	98	325	224	0	19	1	18	0	0	0
Total Analysis Volume [veh/h]	0	610	392	1300	896	0	77	3	70	0	0	0
Presence of On-Street Parking			no	no			no		no			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	33	0	39	72	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Minimum Recall		no		no	no			no				
Maximum Recall		no		no	no			no				
Pedestrian Recall		no		no	no			no				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	
g_i, Effective Green Time [s]	30	30	36	69	15	15	
g / C, Green / Cycle	0.33	0.33	0.40	0.77	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.28	0.32	0.40	0.51	0.05	0.05	
s, saturation flow rate [veh/h]	1765	1551	3264	1765	1684	1500	
c, Capacity [veh/h]	588	517	1306	1353	281	250	
d1, Uniform Delay [s]	27.93	29.55	26.92	4.98	32.81	32.78	
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	14.45	32.67	23.92	2.57	2.54	2.78	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

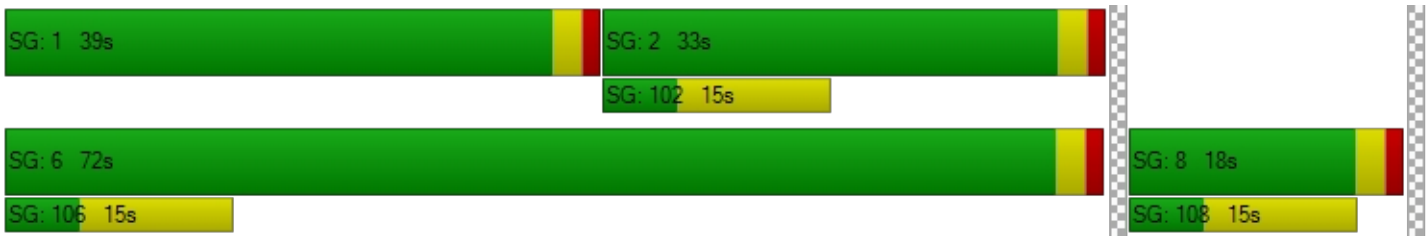
X, volume / capacity	0.85	0.97	1.00	0.66	0.29	0.28	
d, Delay for Lane Group [s/veh]	42.38	62.22	50.84	7.54	35.35	35.56	
Lane Group LOS	D	E	D	A	D	D	
Critical Lane Group	no	yes	yes	no	yes	no	
50th-Percentile Queue Length [veh]	12.00	14.89	17.43	6.33	1.71	1.51	
50th-Percentile Queue Length [ft]	300.08	372.30	435.63	158.30	42.63	37.77	
95th-Percentile Queue Length [veh]	17.68	21.22	24.27	10.46	3.07	2.72	
95th-Percentile Queue Length [ft]	442.12	530.52	606.78	261.47	76.74	67.98	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	45.92	62.22	50.84	7.54	0.00	35.35	35.35	35.56	0.00	0.00	0.00
Movement LOS		D	E	D	A		D	D	D			
d_A, Approach Delay [s/veh]	52.30			33.18			35.44			0.00		
Approach LOS	D			C			D			A		
d_I, Intersection Delay [s/veh]	39.00											
Intersection LOS	D											
Intersection V/C	0.824											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#8: University Pkwy / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	138.7
Analysis Method:	HCM2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.227

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Base Volume Input [veh/h]	44	593	0	0	1611	71	0	0	0	433	10	1808
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.00	1.03	1.03	1.00	1.00	1.00	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	45	611	0	0	1659	73	0	0	0	446	10	1862
Peak Hour Factor	0.9170	0.9170	0.9500	0.9500	0.9170	0.9170	0.9500	0.9500	0.9500	0.9170	0.9170	0.9170
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	167	0	0	452	20	0	0	0	122	3	508
Total Analysis Volume [veh/h]	49	666	0	0	1809	80	0	0	0	486	11	2031
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	10	51	0	0	41	0	0	0	0	0	79	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no			no						no	
Maximum Recall	no	no			no						no	
Pedestrian Recall	no	no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	R		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	7	48	38	38		76	76
g / C, Green / Cycle	0.05	0.37	0.29	0.29		0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.03	0.20	0.38	0.05		0.30	0.76
s, saturation flow rate [veh/h]	1681	3360	4807	1500		1682	2655
c, Capacity [veh/h]	90	1241	1405	438		984	1552
d1, Uniform Delay [s]	59.94	32.25	46.00	34.39		15.92	27.00
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	21.29	1.67	134.84	0.91		1.85	143.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

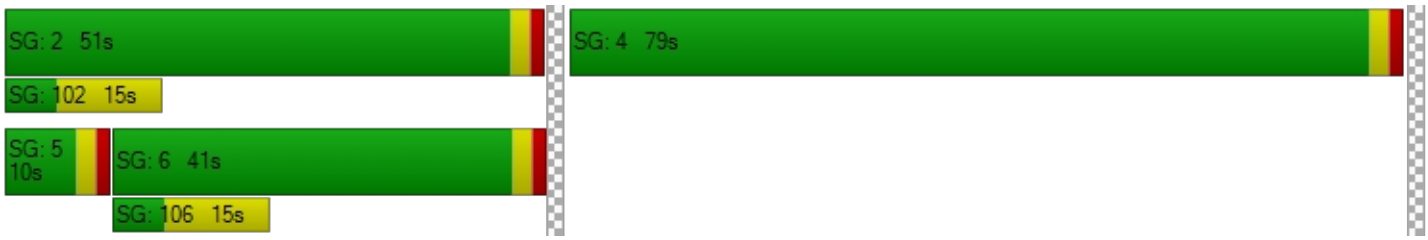
X, volume / capacity	0.54	0.54	1.29	0.18		0.51	1.31
d, Delay for Lane Group [s/veh]	81.23	33.92	180.84	35.30		17.77	170.58
Lane Group LOS	F	C	F	D		B	F
Critical Lane Group	yes	no	yes	no		no	yes
50th-Percentile Queue Length [veh]	2.11	8.55	32.55	2.03		9.05	53.59
50th-Percentile Queue Length [ft]	52.85	213.74	813.71	50.68		226.31	1339.74
95th-Percentile Queue Length [veh]	3.81	13.35	48.31	3.65		13.99	79.56
95th-Percentile Queue Length [ft]	95.13	333.63	1207.79	91.22		349.67	1989.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	81.23	33.92	0.00	0.00	180.84	35.30	0.00	0.00	0.00	17.77	17.77	170.58
Movement LOS	F	C			F	D				B	B	F
d_A, Approach Delay [s/veh]	37.16			174.68			0.00			140.54		
Approach LOS	D			F			A			F		
d_I, Intersection Delay [s/veh]	138.70											
Intersection LOS	F											
Intersection V/C	1.227											

Sequence

Ring 1	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#9: University Pkwy / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	34.3
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.707

Intersection Setup

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Base Volume Input [veh/h]	401	845	288	101	1033	91	112	331	155	215	383	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	413	870	297	104	1064	94	115	341	160	221	394	65
Peak Hour Factor	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	116	244	83	29	299	26	32	96	45	62	111	18
Total Analysis Volume [veh/h]	464	976	333	117	1194	105	129	383	180	248	442	73
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	42	0	12	34	0	10	24	0	12	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no		no	no		no	no		no	no	
Maximum Recall	no	no		no	no		no	no		no	no	
Pedestrian Recall	no	no		no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	17	39	39	9	31	31	7	21	21	9	23	23
g / C, Green / Cycle	0.19	0.43	0.43	0.10	0.34	0.34	0.08	0.23	0.23	0.10	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.14	0.27	0.27	0.07	0.26	0.26	0.04	0.17	0.17	0.08	0.15	0.15
s, saturation flow rate [veh/h]	3264	3360	1545	1681	3360	1693	3264	1765	1577	3264	1765	1679
c, Capacity [veh/h]	617	1456	670	168	1157	583	254	412	368	326	451	429
d1, Uniform Delay [s]	34.51	19.70	19.74	39.18	26.03	26.03	39.85	31.78	31.84	39.45	29.32	29.33
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.27	1.95	4.25	21.24	4.41	8.46	7.10	10.34	11.80	15.29	5.46	5.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

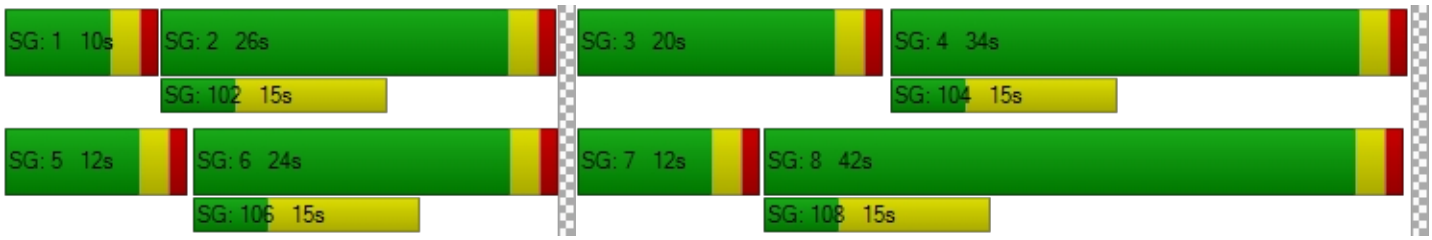
X, volume / capacity	0.75	0.61	0.62	0.70	0.75	0.75	0.51	0.72	0.73	0.76	0.58	0.59
d, Delay for Lane Group [s/veh]	42.78	21.65	23.99	60.42	30.44	34.49	46.95	42.12	43.64	54.73	34.78	35.09
Lane Group LOS	D	C	C	E	C	C	D	D	D	D	C	D
Critical Lane Group	yes	no	no	no	no	yes	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	5.41	7.28	7.17	3.46	8.56	9.28	1.60	6.97	6.44	3.33	5.56	5.34
50th-Percentile Queue Length [ft]	135.30	181.91	179.26	86.46	213.99	232.02	40.12	174.37	160.95	83.13	138.95	133.39
95th-Percentile Queue Length [veh]	9.23	11.70	11.56	6.22	13.36	14.28	2.89	11.31	10.60	5.99	9.42	9.12
95th-Percentile Queue Length [ft]	230.68	292.51	289.05	155.62	333.95	356.93	72.22	282.66	264.98	149.64	235.62	228.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.78	21.84	23.99	60.42	31.56	34.49	46.95	42.47	43.64	54.73	34.90	35.09
Movement LOS	D	C	C	E	C	C	D	D	D	D	C	D
d_A, Approach Delay [s/veh]	27.72			34.16			43.61			41.37		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	34.29											
Intersection LOS	C											
Intersection V/C	0.707											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



IPT I-215 DC II

Vistro File: K:\...\SB I-215 DC II AM.vistro
Report File: K:\...\3 - OY + OP AM.pdf

Scenario 3: OY + OP AM
6/28/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Palm Ave / Hallmark Pkwy	Two-way stop	HCM 2010	EB Left	0.020	23.4	C
2	Palm Ave / I-215 SB Ramps	Signalized	HCM 2010	EB Left	1.219	146.5	F
3	Palm Ave / I-215 NB Ramps	Signalized	HCM 2010	WB Right	0.961	24.6	C
4	Palm Ave / Kendall Dr	Signalized	HCM 2010	SB Left	0.762	38.2	D
5	Hallmark Pkwy / Saratoga Way	Two-way stop	HCM 2010	EB Thru	0.000	14.6	B
6	University Pkwy / Hallmark Pkwy	Signalized	HCM 2010	SB Right	0.584	35.0	C
7	University Pkwy / I-215 SB Ramps	Signalized	HCM 2010	NB Right	0.747	28.2	C
8	University Pkwy / I-215 NB Ramps	Signalized	HCM 2010	SB Thru	1.160	127.6	F
9	University Pkwy / Kendall Dr	Signalized	HCM 2010	WB Left	0.703	35.5	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Palm Ave / Hallmark Pkwy

Control Type:	Two-way stop	Delay (sec / veh):	23.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			Yes		

Volumes

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	9	123	1	84	272	1	3	3	2	2	4	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	75	0	0	0	0	0	0	0	45
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	127	1	162	280	1	3	3	2	2	4	70
Peak Hour Factor	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	38	0	49	85	0	1	1	1	1	1	21
Total Analysis Volume [veh/h]	11	154	1	196	339	1	4	4	2	2	5	85
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.02	0.10
d_M, Delay for Movement [s/veh]	7.98	0.00	0.00	7.93	0.00	0.00	23.40	20.89	10.71	21.27	20.68	9.33
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	A
95th-Percentile Queue Length [veh]	0.03	0.00	0.00	0.48	0.00	0.00	0.12	0.12	0.12	0.03	0.21	0.19
95th-Percentile Queue Length [ft]	0.68	0.00	0.00	11.92	0.00	0.00	3.08	3.08	3.08	0.68	5.29	4.64
d_A, Approach Delay [s/veh]	0.53			2.90			19.86			10.20		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	3.46											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: Palm Ave / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	146.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.219

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	24	108	47	723	276	73	33	70	28	87	1	278
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	27	24	22	66	113	94	39	0	41	24	4
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	138	72	767	350	188	128	111	29	131	25	290
Peak Hour Factor	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	41	21	227	104	56	38	33	9	39	7	86
Total Analysis Volume [veh/h]	30	164	85	909	415	223	152	132	34	155	30	344
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	15	0	56	61	0	0	22	0	0	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	7	12	12	53	58	58	19	34
g / C, Green / Cycle	0.05	0.09	0.09	0.41	0.45	0.45	0.15	0.26
(v / s)_i Volume / Saturation Flow Rate	0.02	0.07	0.08	0.54	0.19	0.20	0.19	0.34
s, saturation flow rate [veh/h]	1681	1765	1570	1681	1765	1564	1692	1563
c, Capacity [veh/h]	90	163	145	685	787	698	247	409
d1, Uniform Delay [s]	59.25	57.75	58.02	38.50	24.56	24.79	55.50	48.00
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.56	30.87	40.44	156.97	1.65	2.00	155.61	149.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

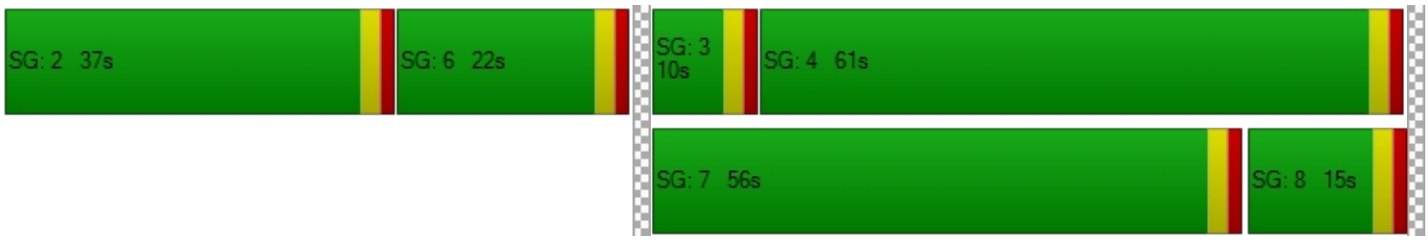
X, volume / capacity	0.33	0.79	0.83	1.33	0.42	0.44	1.29	1.29
d, Delay for Lane Group [s/veh]	68.81	88.62	98.46	195.47	26.21	26.79	211.11	197.66
Lane Group LOS	E	F	F	F	C	C	F	F
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	1.20	5.53	5.54	51.28	7.36	6.90	18.79	30.15
50th-Percentile Queue Length [ft]	29.90	138.22	138.51	1282.09	183.92	172.61	469.69	753.75
95th-Percentile Queue Length [veh]	2.15	9.39	9.40	75.39	11.80	11.21	28.83	44.98
95th-Percentile Queue Length [ft]	53.81	234.63	235.02	1884.71	295.12	280.34	720.63	1124.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	68.81	90.77	98.46	195.47	26.33	26.79	211.11	211.11	211.11	197.66	197.66	197.66
Movement LOS	E	F	F	F	C	C	F	F	F	F	F	F
d_A, Approach Delay [s/veh]	90.75			125.78			211.11			197.66		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	146.50											
Intersection LOS	F											
Intersection V/C	1.219											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Palm Ave / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.961

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	29	390	0	0	921	331	0	0	0	152	1	385
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.00	1.03	1.03	1.00	1.00	1.00	1.03	1.03	1.03
In-Process Volume [veh/h]	33	94	0	0	124	7	0	0	0	76	0	17
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	63	496	0	0	1073	348	0	0	0	233	1	414
Peak Hour Factor	0.9080	0.9080	0.9500	0.9500	0.9080	0.9080	0.9500	0.9500	0.9500	0.9080	0.9080	0.9080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	137	0	0	295	96	0	0	0	64	0	114
Total Analysis Volume [veh/h]	69	546	0	0	1182	383	0	0	0	257	1	456
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	8	0	0	4	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	57	0	0	57	0	0	0	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall		No			No						No	
Maximum Recall		No			No						No	
Pedestrian Recall		No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	54	54	54	54		30	30
g / C, Green / Cycle	0.60	0.60	0.60	0.60		0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.61	0.34	0.44	0.48		0.15	0.30
s, saturation flow rate [veh/h]	112	1606	1765	1624		1681	1500
c, Capacity [veh/h]	147	964	1059	975		560	500
d1, Uniform Delay [s]	35.94	10.91	12.94	13.89		23.63	28.74
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	10.30	2.41	4.63	6.97		2.71	23.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.57	0.74	0.80		0.46	0.91
d, Delay for Lane Group [s/veh]	46.24	13.32	17.57	20.87		26.34	52.17
Lane Group LOS	D	B	B	C		C	D
Critical Lane Group	Yes	No	No	No		No	Yes
50th-Percentile Queue Length [veh]	1.91	6.53	11.37	12.63		4.62	12.29
50th-Percentile Queue Length [ft]	47.63	163.31	284.16	315.78		115.56	307.13
95th-Percentile Queue Length [veh]	3.43	10.72	16.90	18.46		8.15	18.03
95th-Percentile Queue Length [ft]	85.73	268.11	422.38	461.50		203.71	450.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.24	13.32	0.00	0.00	18.68	20.87	0.00	0.00	0.00	26.34	26.34	52.17
Movement LOS	D	B			B	C				C	C	D
d_A, Approach Delay [s/veh]	17.02			19.22			0.00			42.84		
Approach LOS	B			B			A			D		
d_I, Intersection Delay [s/veh]	24.58											
Intersection LOS	C											
Intersection V/C	0.961											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Palm Ave / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	38.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.762

Intersection Setup

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Base Volume Input [veh/h]	121	343	311	141	757	71	25	75	160	323	97	154
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	50	61	43	62	0	0	0	0	69	0	35
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	403	381	188	842	73	26	77	165	402	100	194
Peak Hour Factor	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	117	110	55	244	21	8	22	48	117	29	56
Total Analysis Volume [veh/h]	145	468	442	218	977	85	30	89	191	466	116	225
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	8	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	30	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	37	37	16	39	0	10	19	0	18	27	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	11	34	34	13	36	36	7	16	16	15	24	24
g / C, Green / Cycle	0.12	0.38	0.38	0.14	0.40	0.40	0.08	0.18	0.18	0.17	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.09	0.14	0.29	0.13	0.30	0.31	0.02	0.05	0.13	0.14	0.07	0.15
s, saturation flow rate [veh/h]	1681	3360	1500	1681	1765	1716	1681	1765	1500	3264	1765	1500
c, Capacity [veh/h]	205	1269	567	243	706	686	131	314	267	544	471	400
d1, Uniform Delay [s]	37.95	20.24	24.70	37.85	23.30	23.33	38.97	32.04	34.86	36.45	25.90	28.47
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	18.46	0.83	10.21	36.40	7.62	7.90	4.05	2.26	15.22	15.87	1.25	5.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.71	0.37	0.78	0.90	0.76	0.76	0.23	0.28	0.72	0.86	0.25	0.56
d, Delay for Lane Group [s/veh]	56.40	21.07	34.91	74.25	30.92	31.23	43.02	34.29	50.08	52.33	27.15	34.10
Lane Group LOS	E	C	C	E	C	C	D	C	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	4.08	3.59	9.55	7.09	10.86	10.65	0.76	1.85	5.00	6.08	2.08	4.71
50th-Percentile Queue Length [ft]	101.95	89.76	238.69	177.25	271.60	266.32	19.08	46.32	124.88	151.94	52.03	117.86
95th-Percentile Queue Length [veh]	7.34	6.46	14.62	11.46	16.27	16.01	1.37	3.34	8.66	10.12	3.75	8.28
95th-Percentile Queue Length [ft]	183.50	161.57	365.38	286.42	406.74	400.13	34.35	83.38	216.52	253.02	93.65	206.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.40	21.07	34.91	74.25	31.06	31.23	43.02	34.29	50.08	52.33	27.15	34.10
Movement LOS	E	C	C	E	C	C	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	31.72			38.42			44.87			43.62		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	38.17											
Intersection LOS	D											
Intersection V/C	0.762											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: Hallmark Pkwy / Saratoga Way

Control Type:	Two-way stop	Delay (sec / veh):	14.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Base Volume Input [veh/h]	12	188	10	2	122	4	0	0	9	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	13	147	0	0	49	0	0	0	8	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	341	10	2	175	4	0	0	17	2	0	0
Peak Hour Factor	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	95	3	1	49	1	0	0	5	1	0	0
Total Analysis Volume [veh/h]	28	379	11	2	195	4	0	0	19	2	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.68	0.00	0.00	8.10	0.00	0.00	12.47	14.56	8.92	13.87	14.48	9.47
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh]	0.06	0.00	0.00	0.01	0.00	0.00	0.06	0.06	0.06	0.01	0.01	0.01
95th-Percentile Queue Length [ft]	1.56	0.00	0.00	0.13	0.00	0.00	1.55	1.55	1.55	0.37	0.37	0.37
d_A, Approach Delay [s/veh]	0.51			0.08			8.92			13.87		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	0.67											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 6: University Pkwy / Hallmark Pkwy

Control Type:	Signalized	Delay (sec / veh):	35.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.584

Intersection Setup

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	79	419	4	17	347	299	211	6	37	4	3	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	36	17	0	0	17	131	52	0	15	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	117	449	4	18	374	439	269	6	53	4	3	24
Peak Hour Factor	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	120	1	5	100	118	72	2	14	1	1	6
Total Analysis Volume [veh/h]	125	481	4	19	400	470	288	6	57	4	3	26
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	6	0	6	0	0	2	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	7	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	30	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	13	21	0	10	18	31	0	31	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	10	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	No	No		No	No	No		No			No	
Maximum Recall	No	No		No	No	No		No			No	
Pedestrian Recall	No	No		No	No	No		No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	10	18	18	7	15	28	28	28	28	15	15
g / C, Green / Cycle	0.13	0.23	0.23	0.09	0.19	0.35	0.35	0.35	0.35	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.07	0.14	0.14	0.01	0.12	0.31	0.09	0.09	0.04	0.00	0.02
s, saturation flow rate [veh/h]	1681	1765	1760	1681	3360	1500	1681	1684	1500	1681	1524
c, Capacity [veh/h]	210	397	396	147	630	525	588	589	525	315	286
d1, Uniform Delay [s]	33.09	27.86	27.86	33.69	29.97	24.61	18.52	18.52	17.57	26.47	26.92
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.82	6.87	6.89	1.81	4.83	20.44	1.02	1.01	0.42	0.07	0.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.61	0.61	0.13	0.63	0.90	0.25	0.25	0.11	0.01	0.10
d, Delay for Lane Group [s/veh]	44.91	34.72	34.75	35.49	34.80	45.05	19.53	19.53	17.98	26.54	27.63
Lane Group LOS	D	C	C	D	C	D	B	B	B	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	2.93	4.79	4.78	0.41	3.87	10.89	2.03	2.03	0.75	0.07	0.50
50th-Percentile Queue Length [ft]	73.15	119.85	119.62	10.20	96.67	272.33	50.66	50.74	18.64	1.68	12.62
95th-Percentile Queue Length [veh]	5.27	8.38	8.37	0.73	6.96	16.31	3.65	3.65	1.34	0.12	0.91
95th-Percentile Queue Length [ft]	131.68	209.62	209.31	18.36	174.00	407.65	91.18	91.33	33.56	3.03	22.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.91	34.74	34.75	35.49	34.80	45.05	19.53	19.53	17.98	26.54	27.63	27.63
Movement LOS	D	C	C	D	C	D	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	36.82			40.23			19.28			27.50		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	35.00											
Intersection LOS	C											
Intersection V/C	0.584											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: University Pkwy / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	28.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.747

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	0	374	291	1067	614	0	60	4	72	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.00	1.03	1.03	1.03	1.00	1.00	1.00
In-Process Volume [veh/h]	0	32	33	45	142	0	1	0	2	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	417	333	1144	774	0	63	4	76	0	0	0
Peak Hour Factor	0.9500	0.9280	0.9280	0.9280	0.9280	0.9500	0.9280	0.9280	0.9280	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	112	90	308	209	0	17	1	20	0	0	0
Total Analysis Volume [veh/h]	0	449	359	1233	834	0	68	4	82	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	30	0	42	72	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	
g_i, Effective Green Time [s]	27	27	39	69	15	15	
g / C, Green / Cycle	0.30	0.30	0.43	0.77	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.26	0.38	0.47	0.04	0.05	
s, saturation flow rate [veh/h]	1765	1525	3264	1765	1685	1500	
c, Capacity [veh/h]	529	458	1414	1353	281	250	
d1, Uniform Delay [s]	28.60	29.99	23.22	4.65	32.64	33.06	
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	10.01	21.14	7.64	2.11	2.20	3.47	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

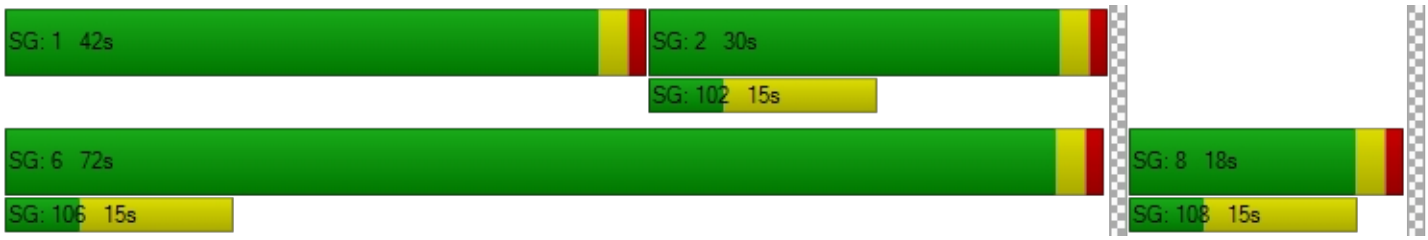
X, volume / capacity	0.76	0.88	0.87	0.62	0.26	0.33	
d, Delay for Lane Group [s/veh]	38.61	51.14	30.86	6.76	34.84	36.53	
Lane Group LOS	D	D	C	A	C	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh]	9.13	10.72	12.68	5.46	1.52	1.80	
50th-Percentile Queue Length [ft]	228.26	268.00	316.99	136.44	38.03	44.96	
95th-Percentile Queue Length [veh]	14.09	16.09	18.52	9.29	2.74	3.24	
95th-Percentile Queue Length [ft]	352.15	402.24	462.99	232.22	68.46	80.92	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	39.86	51.14	30.86	6.76	0.00	34.84	34.84	36.53	0.00	0.00	0.00
Movement LOS		D	D	C	A		C	C	D			
d_A, Approach Delay [s/veh]	44.87			21.14			35.74			0.00		
Approach LOS	D			C			D			A		
d_I, Intersection Delay [s/veh]	28.21											
Intersection LOS	C											
Intersection V/C	0.747											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: University Pkwy / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	127.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.160

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Base Volume Input [veh/h]	29	428	0	0	1299	71	0	0	0	323	5	1565
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.00	1.03	1.03	1.00	1.00	1.00	1.03	1.03	1.03
In-Process Volume [veh/h]	0	31	0	0	98	1	0	0	0	87	0	45
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	472	0	0	1436	74	0	0	0	420	5	1657
Peak Hour Factor	0.8690	0.8690	0.9500	0.9500	0.8690	0.8690	0.9500	0.9500	0.9500	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	136	0	0	413	21	0	0	0	121	1	477
Total Analysis Volume [veh/h]	35	543	0	0	1652	85	0	0	0	483	6	1907
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	0	6	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	10	37	0	0	27	0	0	0	0	0	53	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	7	34	24	24		50	50
g / C, Green / Cycle	0.08	0.38	0.27	0.27		0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.02	0.16	0.34	0.06		0.29	0.72
s, saturation flow rate [veh/h]	1681	3360	4807	1500		1682	2655
c, Capacity [veh/h]	131	1269	1282	400		934	1475
d1, Uniform Delay [s]	39.09	20.78	33.00	25.65		12.53	20.00
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	4.96	1.06	135.92	1.21		2.10	136.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.43	1.29	0.21		0.52	1.29
d, Delay for Lane Group [s/veh]	44.05	21.84	168.92	26.86		14.63	156.98
Lane Group LOS	D	C	F	C		B	F
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh]	0.90	4.29	25.13	1.53		6.22	41.71
50th-Percentile Queue Length [ft]	22.53	107.24	628.36	38.16		155.41	1042.83
95th-Percentile Queue Length [veh]	1.62	7.69	38.17	2.75		10.31	62.60
95th-Percentile Queue Length [ft]	40.55	192.15	954.32	68.69		257.63	1564.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.05	21.84	0.00	0.00	168.92	26.86	0.00	0.00	0.00	14.63	14.63	156.98
Movement LOS	D	C			F	C				B	B	F
d_A, Approach Delay [s/veh]	23.18			161.97			0.00			127.93		
Approach LOS	C			F			A			F		
d_I, Intersection Delay [s/veh]	127.63											
Intersection LOS	F											
Intersection V/C	1.160											

Sequence

Ring 1	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 9: University Pkwy / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	35.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.703

Intersection Setup

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Base Volume Input [veh/h]	92	1207	104	24	276	66	177	368	174	233	274	85
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	43	19	48	0	28	17	19	62	47	66	60	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	138	1262	155	25	312	85	201	441	226	306	342	88
Peak Hour Factor	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	342	42	7	85	23	54	119	61	83	93	24
Total Analysis Volume [veh/h]	150	1367	168	27	338	92	218	478	245	332	371	95
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	40	0	10	39	0	14	26	0	14	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	8	37	37	7	36	36	11	23	23	11	23	23
g / C, Green / Cycle	0.09	0.41	0.41	0.08	0.40	0.40	0.12	0.26	0.26	0.12	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.05	0.31	0.31	0.02	0.09	0.09	0.07	0.22	0.22	0.10	0.14	0.14
s, saturation flow rate [veh/h]	3264	3360	1668	1681	3360	1584	3264	1765	1566	3264	1765	1642
c, Capacity [veh/h]	290	1381	686	131	1344	634	399	451	400	399	451	420
d1, Uniform Delay [s]	39.16	22.46	22.47	38.90	17.72	17.80	37.15	31.85	31.86	38.60	28.89	28.90
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.45	3.64	7.16	3.55	0.36	0.82	5.30	17.83	19.68	18.06	4.49	4.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.74	0.74	0.21	0.21	0.22	0.55	0.85	0.85	0.83	0.53	0.54
d, Delay for Lane Group [s/veh]	45.61	26.10	29.63	42.45	18.08	18.62	42.45	49.68	51.54	56.66	33.37	33.73
Lane Group LOS	D	C	C	D	B	B	D	D	D	E	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	1.82	9.43	10.05	0.68	1.97	2.04	2.52	9.93	9.02	4.52	4.95	4.66
50th-Percentile Queue Length [ft]	45.60	235.83	251.27	17.06	49.32	51.03	63.00	248.23	225.40	113.08	123.86	116.55
95th-Percentile Queue Length [veh]	3.28	14.47	15.25	1.23	3.55	3.67	4.54	15.10	13.94	8.01	8.60	8.20
95th-Percentile Queue Length [ft]	82.07	361.76	381.25	30.71	88.78	91.85	113.39	377.42	348.50	200.28	215.12	205.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.61	26.98	29.63	42.45	18.16	18.62	42.45	50.05	51.54	56.66	33.50	33.73
Movement LOS	D	C	C	D	B	B	D	D	D	E	C	C
d_A, Approach Delay [s/veh]	28.90			19.69			48.68			43.16		
Approach LOS	C			B			D			D		
d_I, Intersection Delay [s/veh]	35.55											
Intersection LOS	D											
Intersection V/C	0.703											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

IPT I-215 DC II

Vistro File: K:\...\SB I-215 DC II PM.vistro
Report File: K:\...\3 - OY + OP PM.pdf

Scenario 3: OY + OP PM
6/28/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Palm Ave / Hallmark Pkwy	Two-way stop	HCM 2010	EB Left	0.000	18.7	C
2	Palm Ave / I-215 SB Ramps	Signalized	HCM 2010	EB Left	0.804	47.7	D
3	Palm Ave / I-215 NB Ramps	Signalized	HCM 2010	NB Left	0.965	30.0	C
4	Palm Ave / Kendall Dr	Signalized	HCM 2010	SB Left	0.698	38.4	D
5	Hallmark Pkwy / Saratoga Way	Two-way stop	HCM 2010	EB Thru	0.000	19.7	C
6	University Pkwy / Hallmark Pkwy	Signalized	HCM 2010	NB Left	0.640	34.8	C
7	University Pkwy / I-215 SB Ramps	Signalized	HCM 2010	NB Right	0.870	41.7	D
8	University Pkwy / I-215 NB Ramps	Signalized	HCM 2010	SB Thru	1.253	147.8	F
9	University Pkwy / Kendall Dr	Signalized	HCM 2010	WB Left	0.781	38.3	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Palm Ave / Hallmark Pkwy

Control Type:	Two-way stop	Delay (sec / veh):	18.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			Yes		

Volumes

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	1	201	9	71	87	2	0	3	1	5	3	146
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	37	0	0	0	0	0	0	0	66
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	207	9	110	90	2	0	3	1	5	3	216
Peak Hour Factor	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	59	3	31	26	1	0	1	0	1	1	62
Total Analysis Volume [veh/h]	1	236	10	126	103	2	0	3	1	6	3	247
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.01	0.00	0.02	0.01	0.31
d_M, Delay for Movement [s/veh]	7.42	0.00	0.00	8.01	0.00	0.00	18.74	14.72	8.86	14.57	15.42	10.33
Movement LOS	A	A	A	A	A	A	C	B	A	B	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.32	0.00	0.00	0.03	0.03	0.03	0.05	0.57	0.56
95th-Percentile Queue Length [ft]	0.05	0.00	0.00	7.90	0.00	0.00	0.69	0.69	0.69	1.20	14.18	13.96
d_A, Approach Delay [s/veh]	0.03			4.37			13.25			10.49		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	5.09											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: Palm Ave / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	47.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.804

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	15	222	129	317	124	83	42	52	20	23	6	231
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	64	50	48	34	63	52	22	0	20	14	13
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	293	183	375	162	148	95	76	21	44	20	251
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	78	49	100	43	39	25	20	6	12	5	67
Total Analysis Volume [veh/h]	16	312	195	400	173	158	101	81	22	47	21	268
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	20	0	28	38	0	0	16	0	0	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	7	17	17	25	35	35	13	23
g / C, Green / Cycle	0.08	0.19	0.19	0.28	0.39	0.39	0.14	0.26
(v / s)_i Volume / Saturation Flow Rate	0.01	0.15	0.16	0.24	0.10	0.11	0.12	0.22
s, saturation flow rate [veh/h]	1681	1765	1543	1681	1765	1500	1691	1538
c, Capacity [veh/h]	131	333	292	467	686	583	244	393
d1, Uniform Delay [s]	38.64	34.88	35.06	30.80	18.63	18.78	37.46	31.91
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.91	18.09	22.42	18.03	0.88	1.14	27.32	20.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

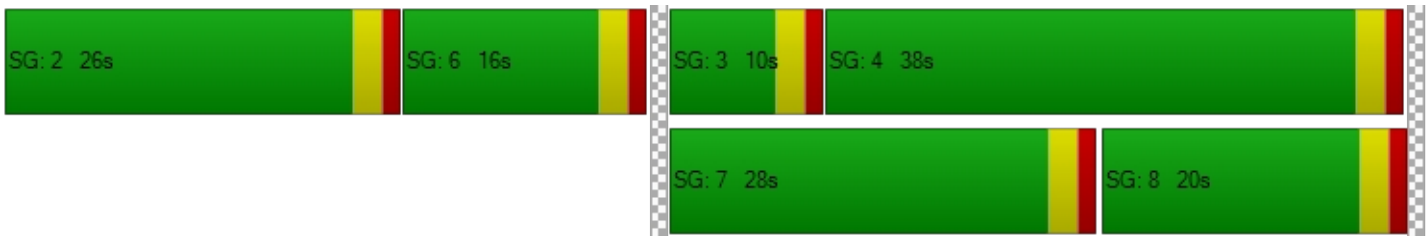
X, volume / capacity	0.12	0.80	0.82	0.86	0.25	0.27	0.84	0.86
d, Delay for Lane Group [s/veh]	40.55	52.97	57.48	48.83	19.51	19.93	64.78	52.47
Lane Group LOS	D	D	E	D	B	B	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.40	7.15	6.76	10.30	2.55	2.37	6.15	9.01
50th-Percentile Queue Length [ft]	9.88	178.69	168.96	257.54	63.63	59.35	153.66	225.14
95th-Percentile Queue Length [veh]	0.71	11.53	11.02	15.57	4.58	4.27	10.21	13.93
95th-Percentile Queue Length [ft]	17.79	288.31	275.54	389.14	114.53	106.82	255.30	348.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.55	53.62	57.48	48.83	19.51	19.93	64.78	64.78	64.78	52.47	52.47	52.47
Movement LOS	D	D	E	D	B	B	E	E	E	D	D	D
d_A, Approach Delay [s/veh]	54.66			35.64			64.78			52.47		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	47.65											
Intersection LOS	D											
Intersection V/C	0.804											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Palm Ave / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	30.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.965

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	60	441	0	0	438	376	0	0	0	102	3	552
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.00	1.03	1.03	1.00	1.00	1.00	1.03	1.03	1.03
In-Process Volume [veh/h]	52	78	0	0	103	13	0	0	0	42	0	52
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	114	532	0	0	554	400	0	0	0	147	3	621
Peak Hour Factor	0.9590	0.9590	0.9500	0.9500	0.9590	0.9590	0.9500	0.9500	0.9500	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	139	0	0	144	104	0	0	0	38	1	162
Total Analysis Volume [veh/h]	119	555	0	0	578	417	0	0	0	153	3	648
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	8	0	0	4	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	46	0	0	46	0	0	0	0	0	44	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall		No			No						No	
Maximum Recall		No			No						No	
Pedestrian Recall		No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	43	43	43	43		41	41
g / C, Green / Cycle	0.48	0.48	0.48	0.48		0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.49	0.35	0.28	0.32		0.09	0.43
s, saturation flow rate [veh/h]	243	1606	1765	1537		1682	1500
c, Capacity [veh/h]	196	767	843	734		766	683
d1, Uniform Delay [s]	35.98	18.75	17.09	18.14		14.70	23.48
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	13.22	5.86	3.02	4.97		0.60	23.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.61	0.72	0.59	0.68		0.20	0.95
d, Delay for Lane Group [s/veh]	49.20	24.61	20.11	23.12		15.30	47.34
Lane Group LOS	D	C	C	C		B	D
Critical Lane Group	Yes	No	No	No		No	Yes
50th-Percentile Queue Length [veh]	3.28	9.88	7.75	8.50		1.97	16.77
50th-Percentile Queue Length [ft]	81.99	246.88	193.87	212.40		49.30	419.14
95th-Percentile Queue Length [veh]	5.90	15.03	12.32	13.28		3.55	23.48
95th-Percentile Queue Length [ft]	147.59	375.72	308.05	331.91		88.74	587.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.20	24.61	0.00	0.00	20.53	23.12	0.00	0.00	0.00	15.30	15.30	47.34
Movement LOS	D	C			C	C				B	B	D
d_A, Approach Delay [s/veh]	28.95			21.62			0.00			41.12		
Approach LOS	C			C			A			D		
d_I, Intersection Delay [s/veh]	29.96											
Intersection LOS	C											
Intersection V/C	0.965											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Palm Ave / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	38.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.698

Intersection Setup

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Base Volume Input [veh/h]	183	476	332	92	260	34	45	64	125	420	110	157
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	87	43	76	80	0	0	0	0	39	0	82
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	188	577	385	171	348	35	46	66	129	472	113	244
Peak Hour Factor	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	156	104	46	94	9	12	18	35	128	31	66
Total Analysis Volume [veh/h]	203	624	416	185	376	38	50	71	139	510	122	264
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	8	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	30	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	37	37	12	26	0	10	18	0	23	31	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	20	34	34	9	23	23	7	15	15	20	28	28
g / C, Green / Cycle	0.22	0.38	0.38	0.10	0.26	0.26	0.08	0.17	0.17	0.22	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.12	0.19	0.28	0.11	0.12	0.12	0.03	0.04	0.09	0.16	0.07	0.18
s, saturation flow rate [veh/h]	1681	3360	1500	1681	1765	1709	1681	1765	1500	3264	1765	1500
c, Capacity [veh/h]	373	1269	567	168	451	437	131	294	250	725	549	467
d1, Uniform Delay [s]	30.96	21.40	24.11	40.50	28.30	28.32	39.45	32.56	34.44	32.26	22.94	25.92
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.59	1.36	8.21	98.95	3.43	3.57	8.28	1.94	8.64	5.64	0.93	4.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

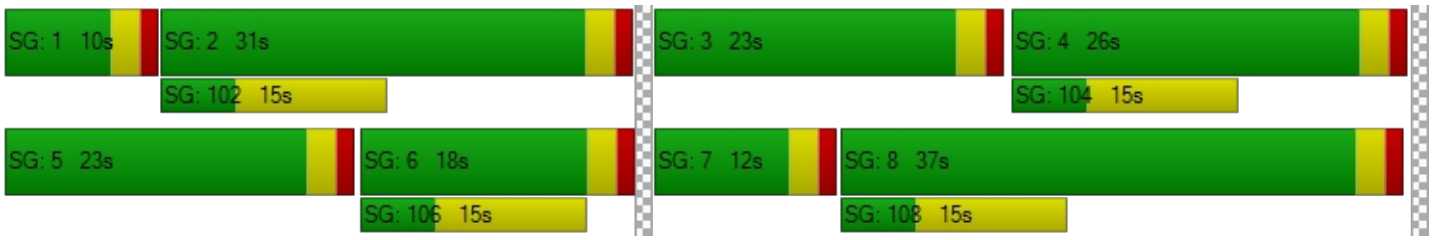
X, volume / capacity	0.54	0.49	0.73	1.10	0.47	0.47	0.38	0.24	0.56	0.70	0.22	0.57
d, Delay for Lane Group [s/veh]	36.55	22.76	32.32	139.45	31.73	31.89	47.73	34.50	43.08	37.90	23.88	30.82
Lane Group LOS	D	C	C	F	C	C	D	C	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	4.40	5.10	8.59	8.28	4.17	4.08	1.34	1.49	3.35	5.57	2.02	5.23
50th-Percentile Queue Length [ft]	110.08	127.39	214.65	207.07	104.37	101.97	33.51	37.15	83.75	139.33	50.54	130.73
95th-Percentile Queue Length [veh]	7.84	8.80	13.39	13.48	7.51	7.34	2.41	2.67	6.03	9.44	3.64	8.98
95th-Percentile Queue Length [ft]	196.11	219.94	334.79	337.00	187.87	183.54	60.31	66.87	150.75	236.12	90.97	224.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.55	22.76	32.32	139.45	31.80	31.89	47.73	34.50	43.08	37.90	23.88	30.82
Movement LOS	D	C	C	F	C	C	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	28.21			65.05			41.63			33.91		
Approach LOS	C			E			D			C		
d_I, Intersection Delay [s/veh]	38.44											
Intersection LOS	D											
Intersection V/C	0.698											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Hallmark Pkwy / Saratoga Way

Control Type:	Two-way stop	Delay (sec / veh):	19.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Base Volume Input [veh/h]	31	178	0	0	290	8	10	0	58	9	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	10	61	0	0	145	0	0	0	10	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	244	0	0	444	8	10	0	70	9	0	0
Peak Hour Factor	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	71	0	0	128	2	3	0	20	3	0	0
Total Analysis Volume [veh/h]	49	282	0	0	514	9	12	0	81	10	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.00	0.00	0.01	0.00	0.04	0.00	0.11	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	8.63	0.00	0.00	7.82	0.00	0.00	18.66	19.67	10.93	16.98	19.09	9.47
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	A
95th-Percentile Queue Length [veh]	0.15	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.10	0.10	0.10
95th-Percentile Queue Length [ft]	3.71	0.00	0.00	0.00	0.00	0.00	13.32	13.32	13.32	2.49	2.49	2.49
d_A, Approach Delay [s/veh]	1.28			0.00			11.93			16.98		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	1.78											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 6: University Pkwy / Hallmark Pkwy

Control Type:	Signalized	Delay (sec / veh):	34.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.640

Intersection Setup

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	142	376	11	40	440	351	536	14	181	10	12	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	18	18	0	0	17	60	127	0	35	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	164	405	11	41	470	422	679	14	221	10	12	40
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	107	3	11	124	112	179	4	58	3	3	11
Total Analysis Volume [veh/h]	173	428	12	43	497	446	718	15	234	11	13	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	6	0	6	0	0	2	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	7	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	30	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	15	25	0	10	20	37	0	37	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	10	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	No	No		No	No	No		No			No	
Maximum Recall	No	No		No	No	No		No			No	
Pedestrian Recall	No	No		No	No	No		No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	12	22	22	7	17	34	34	34	34	15	15
g / C, Green / Cycle	0.13	0.24	0.24	0.08	0.19	0.38	0.38	0.38	0.38	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.10	0.13	0.13	0.03	0.15	0.30	0.22	0.22	0.16	0.01	0.04
s, saturation flow rate [veh/h]	1681	1765	1748	1681	3360	1500	1681	1684	1500	1681	1555
c, Capacity [veh/h]	224	431	427	131	635	567	635	636	567	280	259
d1, Uniform Delay [s]	37.68	29.36	29.37	39.28	34.74	24.79	22.28	22.27	20.64	31.46	32.40
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	22.34	4.30	4.35	6.61	9.34	10.57	3.79	3.77	2.22	0.26	1.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.51	0.51	0.33	0.78	0.79	0.58	0.58	0.41	0.04	0.21
d, Delay for Lane Group [s/veh]	60.02	33.66	33.72	45.88	44.09	35.37	26.08	26.04	22.86	31.72	34.26
Lane Group LOS	E	C	C	D	D	D	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	5.01	4.56	4.52	1.13	5.90	9.71	6.61	6.60	3.86	0.22	1.16
50th-Percentile Queue Length [ft]	125.32	113.91	113.12	28.25	147.41	242.68	165.21	165.06	96.55	5.48	28.93
95th-Percentile Queue Length [veh]	8.68	8.06	8.01	2.03	9.88	14.82	10.82	10.82	6.95	0.39	2.08
95th-Percentile Queue Length [ft]	217.11	201.43	200.34	50.85	246.97	370.42	270.61	270.42	173.79	9.86	52.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.02	33.69	33.72	45.88	44.09	35.37	26.06	26.04	22.86	31.72	34.26	34.26
Movement LOS	E	C	C	D	D	D	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	41.12			40.22			25.28			33.83		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	34.78											
Intersection LOS	C											
Intersection V/C	0.640											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: University Pkwy / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	41.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.870

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	0	564	363	1203	829	0	71	3	65	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.00	1.03	1.03	1.03	1.00	1.00	1.00
In-Process Volume [veh/h]	0	57	84	28	71	0	1	0	3	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	638	458	1267	925	0	74	3	70	0	0	0
Peak Hour Factor	0.9500	0.9530	0.9530	0.9530	0.9530	0.9500	0.9530	0.9530	0.9530	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	167	120	332	243	0	19	1	18	0	0	0
Total Analysis Volume [veh/h]	0	669	481	1329	971	0	78	3	73	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	54	0	58	112	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	
g_i, Effective Green Time [s]	51	51	55	109	15	15	
g / C, Green / Cycle	0.39	0.39	0.42	0.84	0.12	0.12	
(v / s)_i Volume / Saturation Flow Rate	0.33	0.37	0.41	0.55	0.05	0.05	
s, saturation flow rate [veh/h]	1765	1538	3264	1765	1684	1500	
c, Capacity [veh/h]	692	603	1381	1480	194	173	
d1, Uniform Delay [s]	35.61	38.34	36.49	3.77	53.44	53.47	
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	11.12	26.76	16.77	2.29	6.47	7.38	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

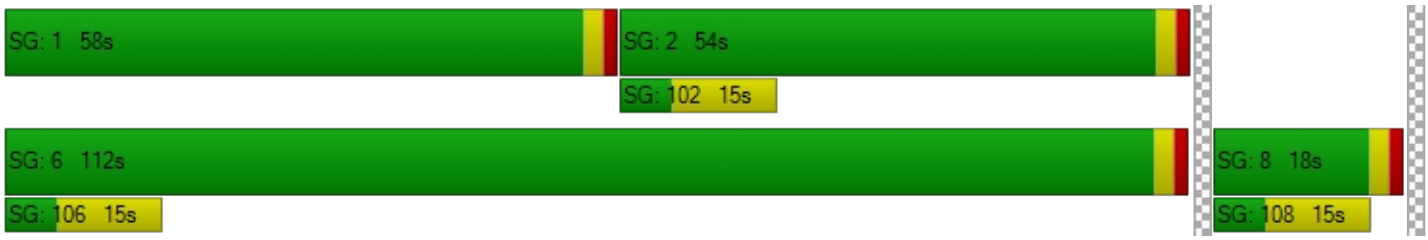
X, volume / capacity	0.83	0.95	0.96	0.66	0.42	0.42	
d, Delay for Lane Group [s/veh]	46.73	65.10	53.26	6.06	59.90	60.84	
Lane Group LOS	D	E	D	A	E	E	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh]	18.40	21.99	23.34	7.31	2.82	2.58	
50th-Percentile Queue Length [ft]	459.89	549.73	583.39	182.69	70.55	64.61	
95th-Percentile Queue Length [veh]	25.43	29.68	31.26	11.74	5.08	4.65	
95th-Percentile Queue Length [ft]	635.73	741.99	781.44	293.52	126.98	116.31	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	49.31	65.10	53.26	6.06	0.00	59.90	59.90	60.84	0.00	0.00	0.00
Movement LOS		D	E	D	A		E	E	E			
d_A, Approach Delay [s/veh]	55.91			33.33			60.35			0.00		
Approach LOS	E			C			E			A		
d_I, Intersection Delay [s/veh]	41.69											
Intersection LOS	D											
Intersection V/C	0.870											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: University Pkwy / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	147.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.253

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Base Volume Input [veh/h]	44	593	0	0	1611	71	0	0	0	433	10	1808
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.00	1.03	1.03	1.00	1.00	1.00	1.03	1.03	1.03
In-Process Volume [veh/h]	1	55	0	0	59	2	0	0	0	38	0	27
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	666	0	0	1718	75	0	0	0	484	10	1889
Peak Hour Factor	0.9170	0.9170	0.9500	0.9500	0.9170	0.9170	0.9500	0.9500	0.9500	0.9170	0.9170	0.9170
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	182	0	0	468	20	0	0	0	132	3	515
Total Analysis Volume [veh/h]	50	726	0	0	1874	82	0	0	0	528	11	2060
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	0	6	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	10	51	0	0	41	0	0	0	0	0	79	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	7	48	38	38		76	76
g / C, Green / Cycle	0.05	0.37	0.29	0.29		0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.03	0.22	0.39	0.05		0.32	0.78
s, saturation flow rate [veh/h]	1681	3360	4807	1500		1682	2655
c, Capacity [veh/h]	90	1241	1405	438		984	1552
d1, Uniform Delay [s]	59.97	32.99	46.00	34.44		16.50	27.00
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	22.13	2.02	155.11	0.94		2.20	151.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

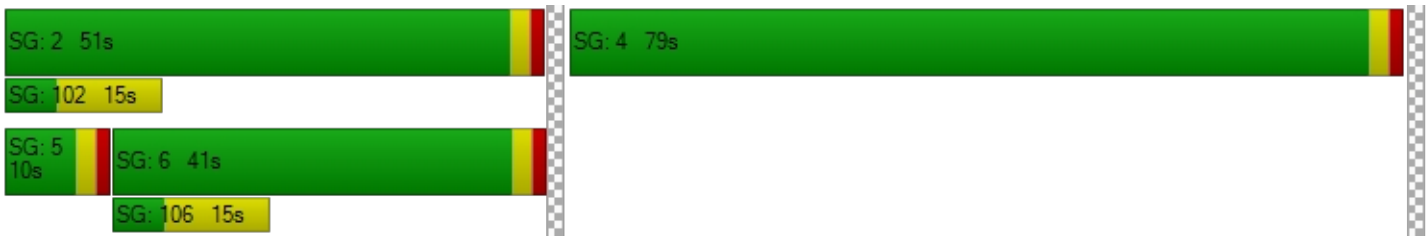
X, volume / capacity	0.55	0.59	1.33	0.19		0.55	1.33
d, Delay for Lane Group [s/veh]	82.10	35.01	201.11	35.38		18.70	178.80
Lane Group LOS	F	D	F	D		B	F
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh]	2.17	9.56	35.19	2.08		10.21	55.36
50th-Percentile Queue Length [ft]	54.21	239.02	879.64	52.03		255.22	1384.01
95th-Percentile Queue Length [veh]	3.90	14.63	52.63	3.75		15.45	82.61
95th-Percentile Queue Length [ft]	97.57	365.79	1315.69	93.66		386.22	2065.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	82.10	35.01	0.00	0.00	201.11	35.38	0.00	0.00	0.00	18.70	18.70	178.80
Movement LOS	F	D			F	D				B	B	F
d_A, Approach Delay [s/veh]	38.05			194.16			0.00			145.59		
Approach LOS	D			F			A			F		
d_I, Intersection Delay [s/veh]	147.76											
Intersection LOS	F											
Intersection V/C	1.253											

Sequence

Ring 1	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: University Pkwy / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	38.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.781

Intersection Setup

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Base Volume Input [veh/h]	401	845	288	101	1033	91	112	331	155	215	383	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	31	23	43	0	24	23	21	76	30	30	79	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	444	893	340	104	1088	117	136	417	190	251	473	65
Peak Hour Factor	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	251	95	29	305	33	38	117	53	70	133	18
Total Analysis Volume [veh/h]	498	1002	382	117	1221	131	153	468	213	282	531	73
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	42	0	12	34	0	10	24	0	12	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	17	39	39	9	31	31	7	21	21	9	23	23
g / C, Green / Cycle	0.19	0.43	0.43	0.10	0.34	0.34	0.08	0.23	0.23	0.10	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.15	0.28	0.29	0.07	0.27	0.27	0.05	0.20	0.20	0.09	0.17	0.17
s, saturation flow rate [veh/h]	3264	3360	1528	1681	3360	1679	3264	1765	1580	3264	1765	1691
c, Capacity [veh/h]	617	1456	662	168	1157	578	254	412	369	326	451	432
d1, Uniform Delay [s]	34.94	20.13	20.22	39.18	26.43	26.43	40.15	33.20	33.22	39.90	30.22	30.22
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.90	2.27	5.07	21.24	5.21	9.98	10.18	21.60	23.78	24.90	8.16	8.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

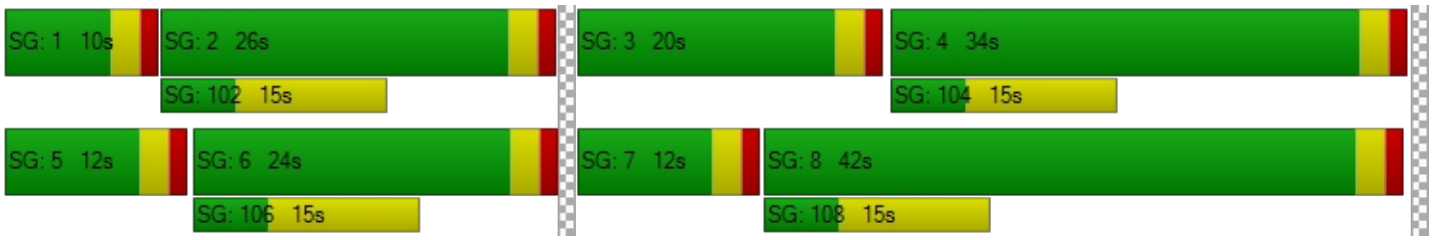
X, volume / capacity	0.81	0.65	0.66	0.70	0.78	0.78	0.60	0.87	0.87	0.86	0.68	0.68
d, Delay for Lane Group [s/veh]	45.83	22.40	25.29	60.42	31.64	36.41	50.33	54.81	57.00	64.80	38.38	38.73
Lane Group LOS	D	C	C	E	C	D	D	D	E	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	6.04	7.91	7.82	3.46	9.16	9.92	1.98	9.81	9.02	4.16	6.90	6.66
50th-Percentile Queue Length [ft]	151.10	197.71	195.44	86.46	228.95	247.88	49.45	245.18	225.56	103.91	172.49	166.38
95th-Percentile Queue Length [veh]	10.08	12.52	12.40	6.22	14.12	15.08	3.56	14.94	13.95	7.48	11.21	10.89
95th-Percentile Queue Length [ft]	251.89	313.01	310.07	155.62	353.02	376.99	89.00	373.57	348.71	187.03	280.19	272.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.83	22.56	25.29	60.42	32.89	36.41	50.33	55.32	57.00	64.80	38.53	38.73
Movement LOS	D	C	C	E	C	D	D	E	E	E	D	D
d_A, Approach Delay [s/veh]	29.27			35.39			54.83			46.91		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	38.33											
Intersection LOS	D											
Intersection V/C	0.781											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



IPT I-215 DC II

Vistro File: K:\...\SB I-215 DC II AM.vistro
Report File: K:\...\4 - OY + OP + Proj AM.pdf

Scenario 4: OY + OP + Project AM
6/28/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Palm Ave / Hallmark Pkwy	Two-way stop	HCM 2010	EB Left	0.021	24.2	C
2	Palm Ave / I-215 SB Ramps	Signalized	HCM 2010	EB Left	1.226	148.4	F
3	Palm Ave / I-215 NB Ramps	Signalized	HCM 2010	WB Right	0.991	24.6	C
4	Palm Ave / Kendall Dr	Signalized	HCM 2010	SB Left	0.762	38.2	D
5	Hallmark Pkwy / Saratoga Way	Two-way stop	HCM 2010	EB Thru	0.000	14.6	B
6	University Pkwy / Hallmark Pkwy	Signalized	HCM 2010	NB Left	0.607	36.3	D
7	University Pkwy / I-215 SB Ramps	Signalized	HCM 2010	NB Right	0.751	28.4	C
8	University Pkwy / I-215 NB Ramps	Signalized	HCM 2010	SB Thru	1.163	128.5	F
9	University Pkwy / Kendall Dr	Signalized	HCM 2010	WB Left	0.707	35.8	D
10	Georgia Blvd / North Driveway	Two-way stop	HCM 2010	NEB Left	0.002	8.7	A
11	Georgia Blvd / South Driveway	Two-way stop	HCM 2010	NEB Left	0.000	9.0	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Palm Ave / Hallmark Pkwy

Control Type:	Two-way stop	Delay (sec / veh):	24.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			Yes		

Volumes

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	9	123	1	84	272	1	3	3	2	2	4	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	75	0	0	0	0	0	0	0	45
Site-Generated Trips [veh/h]	0	0	0	8	0	0	0	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	127	1	170	280	1	3	3	2	2	4	72
Peak Hour Factor	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250	0.8250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	38	0	52	85	0	1	1	1	1	1	22
Total Analysis Volume [veh/h]	11	154	1	206	339	1	4	4	2	2	5	87
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.02	0.10
d_M, Delay for Movement [s/veh]	7.98	0.00	0.00	7.95	0.00	0.00	24.18	21.48	10.75	21.90	21.24	9.33
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	A
95th-Percentile Queue Length [veh]	0.03	0.00	0.00	0.51	0.00	0.00	0.13	0.13	0.13	0.03	0.22	0.19
95th-Percentile Queue Length [ft]	0.68	0.00	0.00	12.63	0.00	0.00	3.20	3.20	3.20	0.70	5.46	4.76
d_A, Approach Delay [s/veh]	0.53			3.00			20.41			10.24		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	3.54											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: Palm Ave / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	148.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.226

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	24	108	47	723	276	73	33	70	28	87	1	278
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	27	24	22	66	113	94	39	0	41	24	4
Site-Generated Trips [veh/h]	0	2	0	0	1	0	0	0	0	7	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	140	72	767	351	188	128	111	29	138	25	290
Peak Hour Factor	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	41	21	227	104	56	38	33	9	41	7	86
Total Analysis Volume [veh/h]	30	166	85	909	416	223	152	132	34	164	30	344
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	15	0	56	61	0	0	22	0	0	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	7	12	12	53	58	58	19	34
g / C, Green / Cycle	0.05	0.09	0.09	0.41	0.45	0.45	0.15	0.26
(v / s)_i Volume / Saturation Flow Rate	0.02	0.07	0.08	0.54	0.19	0.20	0.19	0.34
s, saturation flow rate [veh/h]	1681	1765	1571	1681	1765	1564	1692	1564
c, Capacity [veh/h]	90	163	145	685	787	698	247	409
d1, Uniform Delay [s]	59.25	57.78	58.05	38.50	24.56	24.80	55.50	48.00
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.56	31.63	41.34	156.97	1.66	2.01	155.61	158.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

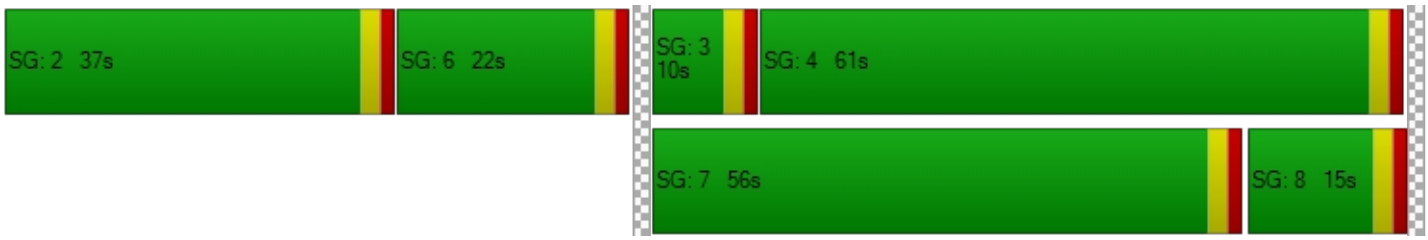
X, volume / capacity	0.33	0.79	0.84	1.33	0.42	0.44	1.29	1.31
d, Delay for Lane Group [s/veh]	68.81	89.41	99.39	195.47	26.22	26.81	211.11	206.19
Lane Group LOS	E	F	F	F	C	C	F	F
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	1.20	5.60	5.61	51.28	7.37	6.92	18.79	31.15
50th-Percentile Queue Length [ft]	29.90	139.97	140.31	1282.09	184.25	172.97	469.69	778.87
95th-Percentile Queue Length [veh]	2.15	9.48	9.50	75.39	11.82	11.23	28.83	46.63
95th-Percentile Queue Length [ft]	53.81	236.98	237.44	1884.71	295.55	280.82	720.63	1165.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	68.81	91.63	99.39	195.47	26.34	26.81	211.11	211.11	211.11	206.19	206.19	206.19
Movement LOS	E	F	F	F	C	C	F	F	F	F	F	F
d_A, Approach Delay [s/veh]	91.54			125.72			211.11			206.19		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	148.38											
Intersection LOS	F											
Intersection V/C	1.226											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Palm Ave / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.991

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	29	390	0	0	921	331	0	0	0	152	1	385
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.00	1.03	1.03	1.00	1.00	1.00	1.03	1.03	1.03
In-Process Volume [veh/h]	33	94	0	0	124	7	0	0	0	76	0	17
Site-Generated Trips [veh/h]	2	0	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	65	496	0	0	1074	348	0	0	0	233	1	414
Peak Hour Factor	0.9080	0.9080	0.9500	0.9500	0.9080	0.9080	0.9500	0.9500	0.9500	0.9080	0.9080	0.9080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	137	0	0	296	96	0	0	0	64	0	114
Total Analysis Volume [veh/h]	72	546	0	0	1183	383	0	0	0	257	1	456
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	8	0	0	4	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	57	0	0	57	0	0	0	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall		No			No						No	
Maximum Recall		No			No						No	
Pedestrian Recall		No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	54	54	54	54		30	30
g / C, Green / Cycle	0.60	0.60	0.60	0.60		0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.64	0.34	0.44	0.48		0.15	0.30
s, saturation flow rate [veh/h]	112	1606	1765	1624		1681	1500
c, Capacity [veh/h]	147	964	1059	975		560	500
d1, Uniform Delay [s]	36.36	10.91	12.94	13.90		23.63	28.74
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	11.16	2.41	4.64	6.99		2.71	23.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.49	0.57	0.74	0.80		0.46	0.91
d, Delay for Lane Group [s/veh]	47.52	13.32	17.58	20.89		26.34	52.17
Lane Group LOS	D	B	B	C		C	D
Critical Lane Group	Yes	No	No	No		No	Yes
50th-Percentile Queue Length [veh]	2.02	6.53	11.38	12.65		4.62	12.29
50th-Percentile Queue Length [ft]	50.59	163.31	284.52	316.22		115.56	307.13
95th-Percentile Queue Length [veh]	3.64	10.72	16.91	18.48		8.15	18.03
95th-Percentile Queue Length [ft]	91.07	268.11	422.84	462.04		203.71	450.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.52	13.32	0.00	0.00	18.70	20.89	0.00	0.00	0.00	26.34	26.34	52.17
Movement LOS	D	B			B	C				C	C	D
d_A, Approach Delay [s/veh]	17.31			19.24			0.00			42.84		
Approach LOS	B			B			A			D		
d_I, Intersection Delay [s/veh]	24.64											
Intersection LOS	C											
Intersection V/C	0.991											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Palm Ave / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	38.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.762

Intersection Setup

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Base Volume Input [veh/h]	121	343	311	141	757	71	25	75	160	323	97	154
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	50	61	43	62	0	0	0	0	69	0	35
Site-Generated Trips [veh/h]	0	0	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	403	381	188	843	73	26	77	165	402	100	194
Peak Hour Factor	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620	0.8620
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	117	110	55	244	21	8	22	48	117	29	56
Total Analysis Volume [veh/h]	145	468	442	218	978	85	30	89	191	466	116	225
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	8	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	30	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	37	37	16	39	0	10	19	0	18	27	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	11	34	34	13	36	36	7	16	16	15	24	24
g / C, Green / Cycle	0.12	0.38	0.38	0.14	0.40	0.40	0.08	0.18	0.18	0.17	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.09	0.14	0.29	0.13	0.31	0.31	0.02	0.05	0.13	0.14	0.07	0.15
s, saturation flow rate [veh/h]	1681	3360	1500	1681	1765	1716	1681	1765	1500	3264	1765	1500
c, Capacity [veh/h]	205	1269	567	243	706	686	131	314	267	544	471	400
d1, Uniform Delay [s]	37.95	20.24	24.70	37.85	23.31	23.34	38.97	32.04	34.86	36.45	25.90	28.47
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	18.46	0.83	10.21	36.40	7.64	7.93	4.05	2.26	15.22	15.87	1.25	5.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.71	0.37	0.78	0.90	0.76	0.76	0.23	0.28	0.72	0.86	0.25	0.56
d, Delay for Lane Group [s/veh]	56.40	21.07	34.91	74.25	30.95	31.27	43.02	34.29	50.08	52.33	27.15	34.10
Lane Group LOS	E	C	C	E	C	C	D	C	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	4.08	3.59	9.55	7.09	10.88	10.67	0.76	1.85	5.00	6.08	2.08	4.71
50th-Percentile Queue Length [ft]	101.95	89.76	238.69	177.25	272.04	266.76	19.08	46.32	124.88	151.94	52.03	117.86
95th-Percentile Queue Length [veh]	7.34	6.46	14.62	11.46	16.29	16.03	1.37	3.34	8.66	10.12	3.75	8.28
95th-Percentile Queue Length [ft]	183.50	161.57	365.38	286.42	407.29	400.69	34.35	83.38	216.52	253.02	93.65	206.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.40	21.07	34.91	74.25	31.09	31.27	43.02	34.29	50.08	52.33	27.15	34.10
Movement LOS	E	C	C	E	C	C	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	31.72			38.45			44.87			43.62		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	38.18											
Intersection LOS	D											
Intersection V/C	0.762											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: Hallmark Pkwy / Saratoga Way

Control Type:	Two-way stop	Delay (sec / veh):	14.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Base Volume Input [veh/h]	12	188	10	2	122	4	0	0	9	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	13	147	0	0	49	0	0	0	8	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	8	2	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	341	10	2	175	12	2	0	17	2	0	0
Peak Hour Factor	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	95	3	1	49	3	1	0	5	1	0	0
Total Analysis Volume [veh/h]	28	379	11	2	195	13	2	0	19	2	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.70	0.00	0.00	8.10	0.00	0.00	12.55	14.65	8.97	13.87	14.60	9.47
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh]	0.06	0.00	0.00	0.01	0.00	0.00	0.08	0.08	0.08	0.01	0.01	0.01
95th-Percentile Queue Length [ft]	1.58	0.00	0.00	0.13	0.00	0.00	1.89	1.89	1.89	0.37	0.37	0.37
d_A, Approach Delay [s/veh]	0.52			0.08			9.32			13.87		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	0.70											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 6: University Pkwy / Hallmark Pkwy

Control Type:	Signalized	Delay (sec / veh):	36.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.607

Intersection Setup

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	79	419	4	17	347	299	211	6	37	4	3	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	36	17	0	0	17	131	52	0	15	0	0	0
Site-Generated Trips [veh/h]	7	0	0	0	0	32	9	0	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	124	449	4	18	374	471	278	6	55	4	3	24
Peak Hour Factor	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	120	1	5	100	126	74	2	15	1	1	6
Total Analysis Volume [veh/h]	133	481	4	19	400	504	298	6	59	4	3	26
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	6	0	6	0	0	2	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	7	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	30	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	16	24	0	10	18	38	0	38	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	10	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	No	No		No	No	No		No			No	
Maximum Recall	No	No		No	No	No		No			No	
Pedestrian Recall	No	No		No	No	No		No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	13	21	21	7	15	35	35	35	35	15	15
g / C, Green / Cycle	0.14	0.23	0.23	0.08	0.17	0.39	0.39	0.39	0.39	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.08	0.14	0.14	0.01	0.12	0.34	0.09	0.09	0.04	0.00	0.02
s, saturation flow rate [veh/h]	1681	1765	1760	1681	3360	1500	1681	1684	1500	1681	1524
c, Capacity [veh/h]	243	412	411	131	560	583	654	655	583	280	254
d1, Uniform Delay [s]	35.77	30.67	30.67	38.71	35.47	25.31	18.47	18.47	17.49	31.32	31.86
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.62	6.08	6.10	2.33	7.59	15.62	0.83	0.83	0.35	0.09	0.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.59	0.59	0.15	0.71	0.86	0.23	0.23	0.10	0.01	0.11
d, Delay for Lane Group [s/veh]	44.39	36.75	36.78	41.04	43.06	40.93	19.31	19.30	17.84	31.42	32.77
Lane Group LOS	D	D	D	D	D	D	B	B	B	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.25	5.28	5.27	0.47	4.67	11.94	2.22	2.22	0.82	0.08	0.59
50th-Percentile Queue Length [ft]	81.35	132.00	131.73	11.80	116.63	298.45	55.50	55.59	20.43	1.98	14.87
95th-Percentile Queue Length [veh]	5.86	9.05	9.03	0.85	8.21	17.60	4.00	4.00	1.47	0.14	1.07
95th-Percentile Queue Length [ft]	146.42	226.21	225.84	21.25	205.18	440.11	99.90	100.07	36.78	3.56	26.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.39	36.76	36.78	41.04	43.06	40.93	19.31	19.30	17.84	31.42	32.77	32.77
Movement LOS	D	D	D	D	D	D	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	38.40			41.85			19.07			32.60		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	36.33											
Intersection LOS	D											
Intersection V/C	0.607											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: University Pkwy / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	28.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.751

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	0	374	291	1067	614	0	60	4	72	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.00	1.03	1.03	1.03	1.00	1.00	1.00
In-Process Volume [veh/h]	0	32	33	45	142	0	1	0	2	0	0	0
Site-Generated Trips [veh/h]	0	3	6	0	32	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	420	339	1144	806	0	63	4	76	0	0	0
Peak Hour Factor	0.9500	0.9280	0.9280	0.9280	0.9280	0.9500	0.9280	0.9280	0.9280	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	113	91	308	217	0	17	1	20	0	0	0
Total Analysis Volume [veh/h]	0	453	365	1233	869	0	68	4	82	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	30	0	42	72	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	
g_i, Effective Green Time [s]	27	27	39	69	15	15	
g / C, Green / Cycle	0.30	0.30	0.43	0.77	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.27	0.38	0.49	0.04	0.05	
s, saturation flow rate [veh/h]	1765	1525	3264	1765	1685	1500	
c, Capacity [veh/h]	529	457	1414	1353	281	250	
d1, Uniform Delay [s]	28.70	30.13	23.22	4.83	32.64	33.06	
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	10.48	22.57	7.64	2.35	2.20	3.47	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

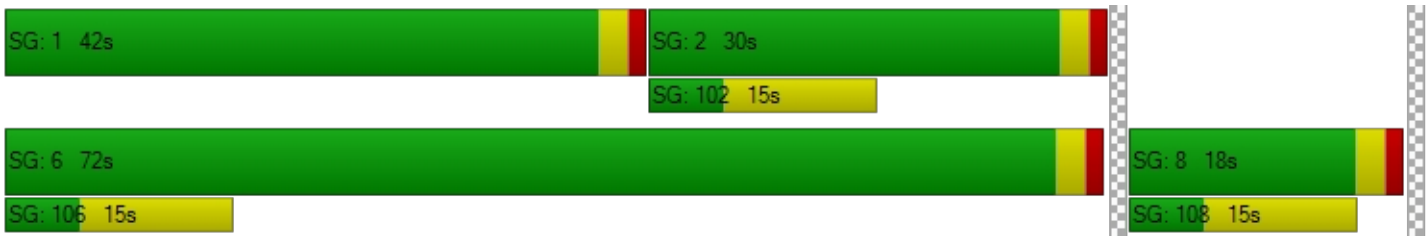
X, volume / capacity	0.77	0.89	0.87	0.64	0.26	0.33	
d, Delay for Lane Group [s/veh]	39.18	52.70	30.86	7.18	34.84	36.53	
Lane Group LOS	D	D	C	A	C	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh]	9.32	11.04	12.68	5.93	1.52	1.80	
50th-Percentile Queue Length [ft]	233.05	275.92	316.99	148.35	38.03	44.96	
95th-Percentile Queue Length [veh]	14.33	16.49	18.52	9.93	2.74	3.24	
95th-Percentile Queue Length [ft]	358.23	412.13	462.99	248.23	68.46	80.92	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	40.49	52.70	30.86	7.18	0.00	34.84	34.84	36.53	0.00	0.00	0.00
Movement LOS		D	D	C	A		C	C	D			
d_A, Approach Delay [s/veh]	45.94			21.07			35.74			0.00		
Approach LOS	D			C			D			A		
d_I, Intersection Delay [s/veh]	28.43											
Intersection LOS	C											
Intersection V/C	0.751											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: University Pkwy / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	128.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.163

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Base Volume Input [veh/h]	29	428	0	0	1299	71	0	0	0	323	5	1565
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.00	1.03	1.03	1.00	1.00	1.00	1.03	1.03	1.03
In-Process Volume [veh/h]	0	31	0	0	98	1	0	0	0	87	0	45
Site-Generated Trips [veh/h]	0	3	0	0	10	0	0	0	0	22	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	475	0	0	1446	74	0	0	0	442	5	1657
Peak Hour Factor	0.8690	0.8690	0.9500	0.9500	0.8690	0.8690	0.9500	0.9500	0.9500	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	137	0	0	416	21	0	0	0	127	1	477
Total Analysis Volume [veh/h]	35	547	0	0	1664	85	0	0	0	509	6	1907
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	0	6	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	10	37	0	0	27	0	0	0	0	0	53	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	7	34	24	24		50	50
g / C, Green / Cycle	0.08	0.38	0.27	0.27		0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.02	0.16	0.35	0.06		0.31	0.72
s, saturation flow rate [veh/h]	1681	3360	4807	1500		1682	2655
c, Capacity [veh/h]	131	1269	1282	400		934	1475
d1, Uniform Delay [s]	39.09	20.81	33.00	25.65		12.81	20.00
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	4.96	1.07	140.00	1.21		2.34	136.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.43	1.30	0.21		0.55	1.29
d, Delay for Lane Group [s/veh]	44.05	21.88	173.00	26.86		15.15	156.98
Lane Group LOS	D	C	F	C		B	F
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh]	0.90	4.33	25.62	1.53		6.71	41.71
50th-Percentile Queue Length [ft]	22.53	108.20	640.47	38.16		167.86	1042.83
95th-Percentile Queue Length [veh]	1.62	7.74	38.95	2.75		10.96	62.60
95th-Percentile Queue Length [ft]	40.55	193.50	973.63	68.69		274.10	1564.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.05	21.88	0.00	0.00	173.00	26.86	0.00	0.00	0.00	15.15	15.15	156.98
Movement LOS	D	C			F	C				B	B	F
d_A, Approach Delay [s/veh]	23.21			165.90			0.00			126.82		
Approach LOS	C			F			A			F		
d_I, Intersection Delay [s/veh]	128.51											
Intersection LOS	F											
Intersection V/C	1.163											

Sequence

Ring 1	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 9: University Pkwy / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	35.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.707

Intersection Setup

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Base Volume Input [veh/h]	92	1207	104	24	276	66	177	368	174	233	274	85
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	43	19	48	0	28	17	19	62	47	66	60	0
Site-Generated Trips [veh/h]	1	0	2	0	1	0	0	0	3	6	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	1262	157	25	313	85	201	441	229	312	342	88
Peak Hour Factor	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	342	43	7	85	23	54	119	62	85	93	24
Total Analysis Volume [veh/h]	151	1367	170	27	339	92	218	478	248	338	371	95
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	40	0	10	39	0	13	26	0	14	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	8	37	37	7	36	36	10	23	23	11	24	24
g / C, Green / Cycle	0.09	0.41	0.41	0.08	0.40	0.40	0.11	0.26	0.26	0.12	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.05	0.31	0.31	0.02	0.09	0.09	0.07	0.22	0.22	0.10	0.14	0.14
s, saturation flow rate [veh/h]	3264	3360	1667	1681	3360	1585	3264	1765	1564	3264	1765	1642
c, Capacity [veh/h]	290	1381	685	131	1344	634	363	451	400	399	471	438
d1, Uniform Delay [s]	39.17	22.47	22.49	38.90	17.72	17.80	38.10	31.89	31.90	38.68	28.03	28.04
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.54	3.66	7.20	3.55	0.37	0.82	7.19	18.21	20.10	19.50	3.95	4.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.74	0.74	0.21	0.21	0.23	0.60	0.85	0.85	0.85	0.51	0.51
d, Delay for Lane Group [s/veh]	45.70	26.13	29.69	42.45	18.09	18.63	45.29	50.10	52.00	58.18	31.98	32.29
Lane Group LOS	D	C	C	D	B	B	D	D	D	E	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	1.84	9.46	10.07	0.68	1.98	2.05	2.62	10.02	9.09	4.67	4.83	4.54
50th-Percentile Queue Length [ft]	45.95	236.40	251.80	17.06	49.45	51.16	65.52	250.55	227.34	116.84	120.77	113.57
95th-Percentile Queue Length [veh]	3.31	14.50	15.28	1.23	3.56	3.68	4.72	15.21	14.04	8.22	8.44	8.04
95th-Percentile Queue Length [ft]	82.72	362.47	381.92	30.71	89.01	92.08	117.94	380.34	350.98	205.48	210.89	200.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.70	27.02	29.69	42.45	18.17	18.63	45.29	50.47	52.00	58.18	32.09	32.29
Movement LOS	D	C	C	D	B	B	D	D	D	E	C	C
d_A, Approach Delay [s/veh]	28.96			19.69			49.68			43.08		
Approach LOS	C			B			D			D		
d_I, Intersection Delay [s/veh]	35.81											
Intersection LOS	D											
Intersection V/C	0.707											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Georgia Blvd / North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	North Driveway		Georgia Blvd		Georgia Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	North Driveway		Georgia Blvd		Georgia Blvd	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	3	13	0	2	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	3	13	0	2	6
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	3	0	1	2
Total Analysis Volume [veh/h]	2	3	14	0	2	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.72	8.36	7.25	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.01	0.01	0.03	0.03	0.00	0.00
95th-Percentile Queue Length [ft]	0.36	0.36	0.66	0.66	0.00	0.00
d_A, Approach Delay [s/veh]	8.50		7.25		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.33					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 11: Georgia Blvd / South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	South Driveway		Georgia Blvd		Georgia Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	South Driveway		Georgia Blvd		Georgia Blvd	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	26	13	3	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	8	26	13	3	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	7	3	1	1
Total Analysis Volume [veh/h]	0	8	27	14	3	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.95	8.36	7.27	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.02	0.02	0.08	0.08	0.00	0.00
95th-Percentile Queue Length [ft]	0.56	0.56	1.95	1.95	0.00	0.00
d_A, Approach Delay [s/veh]	8.36		4.78		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.87					
Intersection LOS	A					

IPT I-215 DC II

Vistro File: K:\...\SB I-215 DC II PM.vistro
Report File: K:\...\4 - OY + OP + Proj PM.pdf

Scenario 4: OY + OP + Project PM
6/28/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Palm Ave / Hallmark Pkwy	Two-way stop	HCM 2010	EB Left	0.000	19.2	C
2	Palm Ave / I-215 SB Ramps	Signalized	HCM 2010	EB Left	0.809	48.0	D
3	Palm Ave / I-215 NB Ramps	Signalized	HCM 2010	NB Left	1.001	30.2	C
4	Palm Ave / Kendall Dr	Signalized	HCM 2010	SB Left	0.698	38.4	D
5	Hallmark Pkwy / Saratoga Way	Two-way stop	HCM 2010	EB Thru	0.000	20.2	C
6	University Pkwy / Hallmark Pkwy	Signalized	HCM 2010	NB Left	0.652	35.3	D
7	University Pkwy / I-215 SB Ramps	Signalized	HCM 2010	NB Right	0.882	43.5	D
8	University Pkwy / I-215 NB Ramps	Signalized	HCM 2010	SB Thru	1.254	147.9	F
9	University Pkwy / Kendall Dr	Signalized	HCM 2010	SB Left	0.783	38.5	D
10	Georgia Blvd / North Driveway	Two-way stop	HCM 2010	NEB Left	0.006	8.7	A
11	Georgia Blvd / South Driveway	Two-way stop	HCM 2010	NEB Left	0.004	8.8	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Palm Ave / Hallmark Pkwy

Control Type:	Two-way stop	Delay (sec / veh):	19.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			Yes		

Volumes

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	1	201	9	71	87	2	0	3	1	5	3	146
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	37	0	0	0	0	0	0	0	66
Site-Generated Trips [veh/h]	0	0	0	4	0	0	0	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	207	9	114	90	2	0	3	1	5	3	226
Peak Hour Factor	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	59	3	33	26	1	0	1	0	1	1	64
Total Analysis Volume [veh/h]	1	236	10	130	103	2	0	3	1	6	3	258
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.01	0.00	0.02	0.01	0.32
d_M, Delay for Movement [s/veh]	7.42	0.00	0.00	8.03	0.00	0.00	19.23	14.85	8.86	14.72	15.59	10.38
Movement LOS	A	A	A	A	A	A	C	B	A	B	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.33	0.00	0.00	0.03	0.03	0.03	0.05	0.60	0.59
95th-Percentile Queue Length [ft]	0.05	0.00	0.00	8.18	0.00	0.00	0.70	0.70	0.70	1.21	14.91	14.68
d_A, Approach Delay [s/veh]	0.03			4.44			13.36			10.53		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	5.20											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: Palm Ave / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	48.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.809

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	15	222	129	317	124	83	42	52	20	23	6	231
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	64	50	48	34	63	52	22	0	20	14	13
Site-Generated Trips [veh/h]	0	10	0	0	1	0	0	0	0	3	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	303	183	375	163	148	95	76	21	47	20	251
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	81	49	100	43	39	25	20	6	13	5	67
Total Analysis Volume [veh/h]	16	323	195	400	174	158	101	81	22	50	21	268
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	22	0	27	39	0	0	15	0	0	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	7	19	19	24	36	36	12	23
g / C, Green / Cycle	0.08	0.21	0.21	0.27	0.40	0.40	0.13	0.26
(v / s)_i Volume / Saturation Flow Rate	0.01	0.15	0.16	0.24	0.10	0.11	0.12	0.22
s, saturation flow rate [veh/h]	1681	1765	1548	1681	1765	1500	1691	1539
c, Capacity [veh/h]	131	373	327	448	706	600	225	393
d1, Uniform Delay [s]	38.64	33.12	33.28	31.76	17.97	18.11	38.44	31.99
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.91	12.00	14.68	22.70	0.83	1.07	39.52	21.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

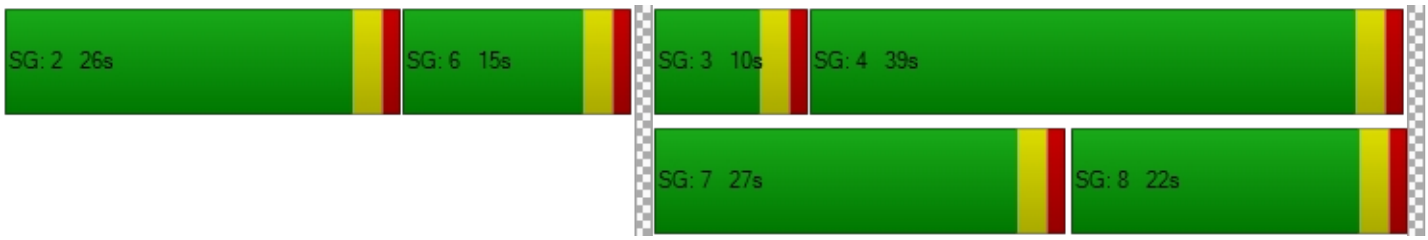
X, volume / capacity	0.12	0.73	0.75	0.89	0.25	0.26	0.90	0.86
d, Delay for Lane Group [s/veh]	40.55	45.13	47.96	54.45	18.80	19.18	77.96	53.29
Lane Group LOS	D	D	D	D	B	B	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.40	6.67	6.24	10.94	2.50	2.32	6.83	9.17
50th-Percentile Queue Length [ft]	9.88	166.83	156.01	273.38	62.55	57.95	170.80	229.13
95th-Percentile Queue Length [veh]	0.71	10.91	10.34	16.36	4.50	4.17	11.12	14.13
95th-Percentile Queue Length [ft]	17.79	272.74	258.43	408.96	112.59	104.30	277.96	353.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.55	45.57	47.96	54.45	18.80	19.18	77.96	77.96	77.96	53.29	53.29	53.29
Movement LOS	D	D	D	D	B	B	E	E	E	D	D	D
d_A, Approach Delay [s/veh]	46.29			38.37			77.96			53.29		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	47.97											
Intersection LOS	D											
Intersection V/C	0.809											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Palm Ave / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	30.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.001

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	60	441	0	0	438	376	0	0	0	102	3	552
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.00	1.03	1.03	1.00	1.00	1.00	1.03	1.03	1.03
In-Process Volume [veh/h]	52	78	0	0	103	13	0	0	0	42	0	52
Site-Generated Trips [veh/h]	8	2	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	534	0	0	555	400	0	0	0	147	3	621
Peak Hour Factor	0.9590	0.9590	0.9500	0.9500	0.9590	0.9590	0.9500	0.9500	0.9500	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	139	0	0	145	104	0	0	0	38	1	162
Total Analysis Volume [veh/h]	127	557	0	0	579	417	0	0	0	153	3	648
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	8	0	0	4	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	46	0	0	46	0	0	0	0	0	44	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall		No			No						No	
Maximum Recall		No			No						No	
Pedestrian Recall		No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	43	43	43	43		41	41
g / C, Green / Cycle	0.48	0.48	0.48	0.48		0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.52	0.35	0.28	0.32		0.09	0.43
s, saturation flow rate [veh/h]	242	1606	1765	1538		1682	1500
c, Capacity [veh/h]	196	767	843	735		766	683
d1, Uniform Delay [s]	36.58	18.79	17.10	18.15		14.70	23.48
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	15.50	5.93	3.03	4.99		0.60	23.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.65	0.73	0.59	0.68		0.20	0.95
d, Delay for Lane Group [s/veh]	52.08	24.72	20.13	23.14		15.30	47.34
Lane Group LOS	D	C	C	C		B	D
Critical Lane Group	Yes	No	No	No		No	Yes
50th-Percentile Queue Length [veh]	3.63	9.94	7.77	8.51		1.97	16.77
50th-Percentile Queue Length [ft]	90.67	248.45	194.16	212.74		49.30	419.14
95th-Percentile Queue Length [veh]	6.53	15.11	12.34	13.29		3.55	23.48
95th-Percentile Queue Length [ft]	163.21	377.70	308.42	332.34		88.74	587.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.08	24.72	0.00	0.00	20.55	23.14	0.00	0.00	0.00	15.30	15.30	47.34
Movement LOS	D	C			C	C				B	B	D
d_A, Approach Delay [s/veh]	29.80			21.63			0.00			41.12		
Approach LOS	C			C			A			D		
d_I, Intersection Delay [s/veh]	30.19											
Intersection LOS	C											
Intersection V/C	1.001											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Palm Ave / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	38.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.698

Intersection Setup

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Base Volume Input [veh/h]	183	476	332	92	260	34	45	64	125	420	110	157
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	87	43	76	80	0	0	0	0	39	0	82
Site-Generated Trips [veh/h]	0	2	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	188	579	385	171	349	35	46	66	129	472	113	244
Peak Hour Factor	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	156	104	46	94	9	12	18	35	128	31	66
Total Analysis Volume [veh/h]	203	626	416	185	377	38	50	71	139	510	122	264
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	8	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	30	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	37	37	12	26	0	10	18	0	23	31	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	20	34	34	9	23	23	7	15	15	20	28	28
g / C, Green / Cycle	0.22	0.38	0.38	0.10	0.26	0.26	0.08	0.17	0.17	0.22	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.12	0.19	0.28	0.11	0.12	0.12	0.03	0.04	0.09	0.16	0.07	0.18
s, saturation flow rate [veh/h]	1681	3360	1500	1681	1765	1709	1681	1765	1500	3264	1765	1500
c, Capacity [veh/h]	373	1269	567	168	451	437	131	294	250	725	549	467
d1, Uniform Delay [s]	30.96	21.41	24.11	40.50	28.31	28.33	39.45	32.56	34.44	32.26	22.94	25.92
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.59	1.37	8.21	98.95	3.44	3.58	8.28	1.94	8.64	5.64	0.93	4.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

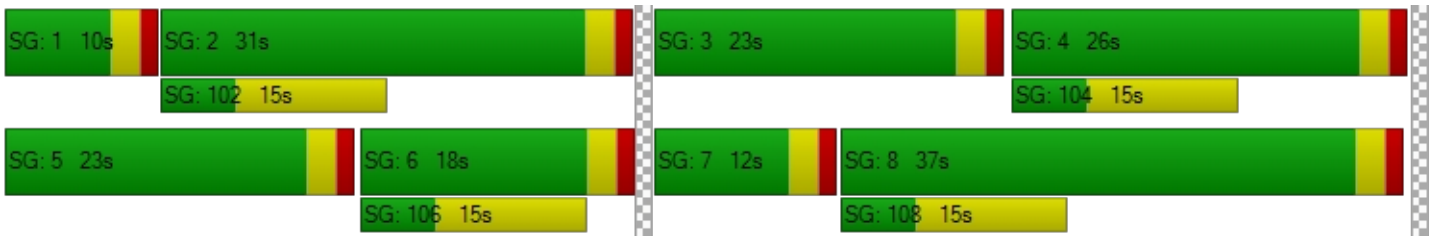
X, volume / capacity	0.54	0.49	0.73	1.10	0.47	0.47	0.38	0.24	0.56	0.70	0.22	0.57
d, Delay for Lane Group [s/veh]	36.55	22.78	32.32	139.45	31.75	31.91	47.73	34.50	43.08	37.90	23.88	30.82
Lane Group LOS	D	C	C	F	C	C	D	C	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	4.40	5.12	8.59	8.28	4.19	4.09	1.34	1.49	3.35	5.57	2.02	5.23
50th-Percentile Queue Length [ft]	110.08	127.90	214.65	207.07	104.68	102.27	33.51	37.15	83.75	139.33	50.54	130.73
95th-Percentile Queue Length [veh]	7.84	8.83	13.39	13.48	7.54	7.36	2.41	2.67	6.03	9.44	3.64	8.98
95th-Percentile Queue Length [ft]	196.11	220.64	334.79	337.00	188.42	184.08	60.31	66.87	150.75	236.12	90.97	224.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.55	22.78	32.32	139.45	31.82	31.91	47.73	34.50	43.08	37.90	23.88	30.82
Movement LOS	D	C	C	F	C	C	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	28.21			65.02			41.63			33.91		
Approach LOS	C			E			D			C		
d_I, Intersection Delay [s/veh]	38.43											
Intersection LOS	D											
Intersection V/C	0.698											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Hallmark Pkwy / Saratoga Way

Control Type:	Two-way stop	Delay (sec / veh):	20.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Base Volume Input [veh/h]	31	178	0	0	290	8	10	0	58	9	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	10	61	0	0	145	0	0	0	10	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	4	10	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	244	0	0	444	12	20	0	70	9	0	0
Peak Hour Factor	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640	0.8640
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	71	0	0	128	3	6	0	20	3	0	0
Total Analysis Volume [veh/h]	49	282	0	0	514	14	23	0	81	10	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.00	0.00	0.01	0.00	0.08	0.00	0.11	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	8.65	0.00	0.00	7.82	0.00	0.00	19.22	20.23	11.46	16.99	19.19	9.47
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	A
95th-Percentile Queue Length [veh]	0.15	0.00	0.00	0.00	0.00	0.00	0.70	0.70	0.70	0.10	0.10	0.10
95th-Percentile Queue Length [ft]	3.72	0.00	0.00	0.00	0.00	0.00	17.50	17.50	17.50	2.49	2.49	2.49
d_A, Approach Delay [s/veh]	1.28			0.00			13.18			16.99		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	2.02											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 6: University Pkwy / Hallmark Pkwy

Control Type:	Signalized	Delay (sec / veh):	35.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	142	376	11	40	440	351	536	14	181	10	12	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	18	18	0	0	17	60	127	0	35	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	11	31	0	8	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	167	405	11	41	470	433	710	14	229	10	12	40
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	107	3	11	124	114	188	4	61	3	3	11
Total Analysis Volume [veh/h]	177	428	12	43	497	458	751	15	242	11	13	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	6	0	6	0	0	2	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	7	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	30	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	15	25	0	10	20	37	0	37	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	10	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	No	No		No	No	No		No			No	
Maximum Recall	No	No		No	No	No		No			No	
Pedestrian Recall	No	No		No	No	No		No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	12	22	22	7	17	34	34	34	34	15	15
g / C, Green / Cycle	0.13	0.24	0.24	0.08	0.19	0.38	0.38	0.38	0.38	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.11	0.13	0.13	0.03	0.15	0.31	0.23	0.23	0.16	0.01	0.04
s, saturation flow rate [veh/h]	1681	1765	1748	1681	3360	1500	1681	1684	1500	1681	1555
c, Capacity [veh/h]	224	431	427	131	635	567	635	636	567	280	259
d1, Uniform Delay [s]	37.78	29.36	29.37	39.28	34.74	25.08	22.56	22.55	20.77	31.46	32.40
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	24.07	4.30	4.35	6.61	9.34	11.78	4.21	4.18	2.35	0.26	1.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.51	0.51	0.33	0.78	0.81	0.60	0.60	0.43	0.04	0.21
d, Delay for Lane Group [s/veh]	61.85	33.66	33.72	45.88	44.09	36.86	26.78	26.74	23.12	31.72	34.26
Lane Group LOS	E	C	C	D	D	D	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	5.21	4.56	4.52	1.13	5.90	10.21	7.03	7.02	4.03	0.22	1.16
50th-Percentile Queue Length [ft]	130.35	113.91	113.12	28.25	147.41	255.21	175.70	175.53	100.64	5.48	28.93
95th-Percentile Queue Length [veh]	8.96	8.06	8.01	2.03	9.88	15.45	11.38	11.37	7.25	0.39	2.08
95th-Percentile Queue Length [ft]	223.97	201.43	200.34	50.85	246.97	386.21	284.40	284.18	181.16	9.86	52.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.85	33.69	33.72	45.88	44.09	36.86	26.76	26.74	23.12	31.72	34.26	34.26
Movement LOS	E	C	C	D	D	D	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	41.77			40.85			25.88			33.83		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	35.28											
Intersection LOS	D											
Intersection V/C	0.652											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: University Pkwy / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	43.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.882

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	0	564	363	1203	829	0	71	3	65	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.00	1.03	1.03	1.03	1.00	1.00	1.00
In-Process Volume [veh/h]	0	57	84	28	71	0	1	0	3	0	0	0
Site-Generated Trips [veh/h]	0	11	20	0	11	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	649	478	1267	936	0	74	3	70	0	0	0
Peak Hour Factor	0.9500	0.9530	0.9530	0.9530	0.9530	0.9500	0.9530	0.9530	0.9530	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	170	125	332	246	0	19	1	18	0	0	0
Total Analysis Volume [veh/h]	0	681	502	1329	982	0	78	3	73	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	55	0	57	112	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	
g_i, Effective Green Time [s]	52	52	54	109	15	15	
g / C, Green / Cycle	0.40	0.40	0.42	0.84	0.12	0.12	
(v / s)_i Volume / Saturation Flow Rate	0.34	0.39	0.41	0.56	0.05	0.05	
s, saturation flow rate [veh/h]	1765	1535	3264	1765	1684	1500	
c, Capacity [veh/h]	706	614	1356	1480	194	173	
d1, Uniform Delay [s]	35.20	38.07	37.47	3.82	53.44	53.47	
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	11.40	28.37	20.16	2.36	6.47	7.38	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

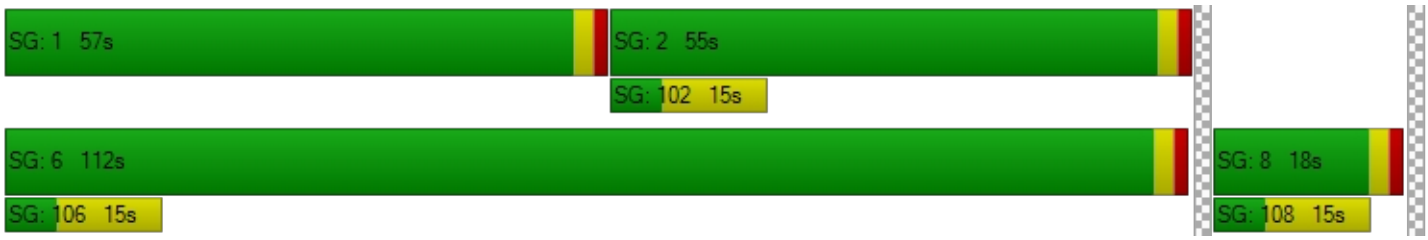
X, volume / capacity	0.84	0.96	0.98	0.66	0.42	0.42	
d, Delay for Lane Group [s/veh]	46.60	66.44	57.64	6.19	59.90	60.84	
Lane Group LOS	D	E	E	A	E	E	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh]	18.95	22.91	24.23	7.50	2.82	2.58	
50th-Percentile Queue Length [ft]	473.68	572.84	605.69	187.53	70.55	64.61	
95th-Percentile Queue Length [veh]	26.09	30.76	32.30	11.99	5.08	4.65	
95th-Percentile Queue Length [ft]	652.14	769.10	807.50	299.82	126.98	116.31	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	49.21	66.44	57.64	6.19	0.00	59.90	59.90	60.84	0.00	0.00	0.00
Movement LOS		D	E	E	A		E	E	E			
d_A, Approach Delay [s/veh]	56.52			35.78			60.35			0.00		
Approach LOS	E			D			E			A		
d_I, Intersection Delay [s/veh]	43.54											
Intersection LOS	D											
Intersection V/C	0.882											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: University Pkwy / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	147.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.254

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Base Volume Input [veh/h]	44	593	0	0	1611	71	0	0	0	433	10	1808
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.00	1.03	1.03	1.00	1.00	1.00	1.03	1.03	1.03
In-Process Volume [veh/h]	1	55	0	0	59	2	0	0	0	38	0	27
Site-Generated Trips [veh/h]	0	11	0	0	4	0	0	0	0	7	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	677	0	0	1722	75	0	0	0	491	10	1889
Peak Hour Factor	0.9170	0.9170	0.9500	0.9500	0.9170	0.9170	0.9500	0.9500	0.9500	0.9170	0.9170	0.9170
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	185	0	0	469	20	0	0	0	134	3	515
Total Analysis Volume [veh/h]	50	738	0	0	1878	82	0	0	0	535	11	2060
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	0	6	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	10	51	0	0	41	0	0	0	0	0	79	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	7	48	38	38		76	76
g / C, Green / Cycle	0.05	0.37	0.29	0.29		0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.03	0.22	0.39	0.05		0.32	0.78
s, saturation flow rate [veh/h]	1681	3360	4807	1500		1682	2655
c, Capacity [veh/h]	90	1241	1405	438		983	1552
d1, Uniform Delay [s]	59.97	33.14	46.00	34.44		16.60	27.00
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	22.13	2.11	156.36	0.94		2.26	151.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

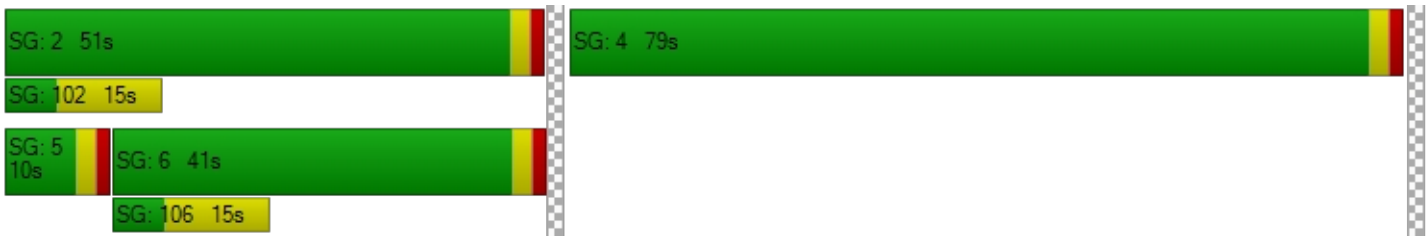
X, volume / capacity	0.55	0.59	1.34	0.19		0.56	1.33
d, Delay for Lane Group [s/veh]	82.10	35.25	202.36	35.38		18.86	178.80
Lane Group LOS	F	D	F	D		B	F
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh]	2.17	9.77	35.35	2.08		10.41	55.36
50th-Percentile Queue Length [ft]	54.21	244.24	883.71	52.03		260.27	1384.01
95th-Percentile Queue Length [veh]	3.90	14.90	52.89	3.75		15.70	82.61
95th-Percentile Queue Length [ft]	97.57	372.40	1322.37	93.66		392.57	2065.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	82.10	35.25	0.00	0.00	202.36	35.38	0.00	0.00	0.00	18.86	18.86	178.80
Movement LOS	F	D			F	D				B	B	F
d_A, Approach Delay [s/veh]	38.22			195.38			0.00			145.29		
Approach LOS	D			F			A			F		
d_I, Intersection Delay [s/veh]	147.87											
Intersection LOS	F											
Intersection V/C	1.254											

Sequence

Ring 1	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: University Pkwy / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	38.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.783

Intersection Setup

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Base Volume Input [veh/h]	401	845	288	101	1033	91	112	331	155	215	383	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	31	23	43	0	24	23	21	76	30	30	79	0
Site-Generated Trips [veh/h]	3	2	6	0	1	0	0	0	1	2	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	447	895	346	104	1089	117	136	417	191	253	473	65
Peak Hour Factor	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910	0.8910
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	251	97	29	306	33	38	117	54	71	133	18
Total Analysis Volume [veh/h]	502	1004	388	117	1222	131	153	468	214	284	531	73
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	42	0	11	33	0	10	24	0	13	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	17	39	39	8	30	30	7	21	21	10	24	24
g / C, Green / Cycle	0.19	0.43	0.43	0.09	0.33	0.33	0.08	0.23	0.23	0.11	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.15	0.28	0.29	0.07	0.27	0.27	0.05	0.20	0.20	0.09	0.17	0.17
s, saturation flow rate [veh/h]	3264	3360	1526	1681	3360	1679	3264	1765	1580	3264	1765	1691
c, Capacity [veh/h]	617	1456	661	149	1120	560	254	412	369	363	471	451
d1, Uniform Delay [s]	34.99	20.18	20.27	40.15	27.34	27.34	40.15	33.22	33.23	38.94	29.32	29.33
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.28	2.31	5.17	32.62	6.22	11.75	10.18	21.77	23.96	15.47	6.96	7.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

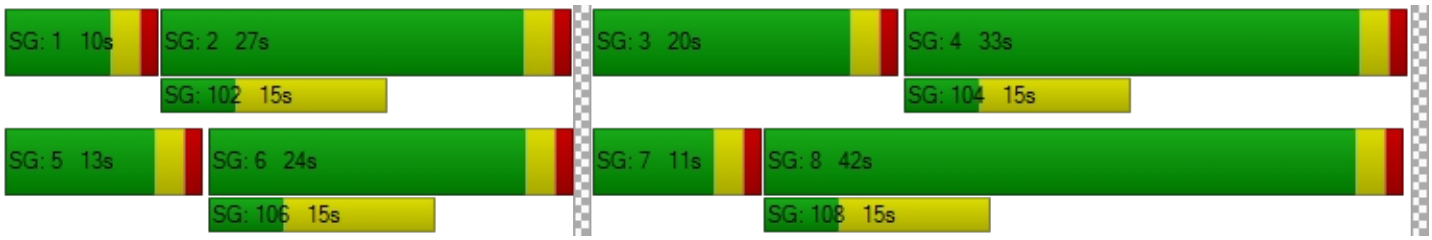
X, volume / capacity	0.81	0.65	0.66	0.78	0.81	0.81	0.60	0.87	0.87	0.78	0.66	0.66
d, Delay for Lane Group [s/veh]	46.26	22.49	25.45	72.77	33.56	39.09	50.33	54.99	57.19	54.41	36.28	36.58
Lane Group LOS	D	C	C	E	C	D	D	D	E	D	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	6.13	7.98	7.89	3.86	9.47	10.32	1.98	9.84	9.05	3.79	6.68	6.44
50th-Percentile Queue Length [ft]	153.13	199.46	197.27	96.38	236.68	257.99	49.45	246.03	226.28	94.67	167.08	161.08
95th-Percentile Queue Length [veh]	10.18	12.61	12.50	6.94	14.51	15.59	3.56	14.99	13.99	6.82	10.92	10.61
95th-Percentile Queue Length [ft]	254.60	315.27	312.44	173.48	362.83	389.70	89.00	374.65	349.63	170.41	273.07	265.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.26	22.64	25.45	72.77	35.01	39.09	50.33	55.50	57.19	54.41	36.41	36.58
Movement LOS	D	C	C	E	D	D	D	E	E	D	D	D
d_A, Approach Delay [s/veh]	29.48			38.38			54.99			42.18		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	38.45											
Intersection LOS	D											
Intersection V/C	0.783											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Georgia Blvd / North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	North Driveway		Georgia Blvd		Georgia Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	North Driveway		Georgia Blvd		Georgia Blvd	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	13	4	4	2	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	13	4	4	2	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	3	1	1	1	1
Total Analysis Volume [veh/h]	6	14	4	4	2	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.66	8.40	7.23	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.06	0.06	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft]	1.45	1.45	0.37	0.37	0.00	0.00
d_A, Approach Delay [s/veh]	8.48		3.62		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.20					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 11: Georgia Blvd / South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	South Driveway		Georgia Blvd		Georgia Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	South Driveway		Georgia Blvd		Georgia Blvd	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	26	10	4	13	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	26	10	4	13	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	7	3	1	3	1
Total Analysis Volume [veh/h]	4	27	11	4	14	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.84	8.49	7.26	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.09	0.09	0.03	0.03	0.00	0.00
95th-Percentile Queue Length [ft]	2.28	2.28	0.71	0.71	0.00	0.00
d_A, Approach Delay [s/veh]	8.53		5.33		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.55					
Intersection LOS	A					

IPT I-215 DC II

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Scenario 5: BO 2035 AM
5/4/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Palm Ave / Hallmark Pkwy	Two-way stop	HCM2010	EBL	0.011	18.7	C
2	Palm Ave / I-215 SB Ramps	Signalized	HCM2010	EBT	0.783	38.4	D
3	Palm Ave / I-215 NB Ramps	Signalized	HCM2010	NBL	0.460	19.8	B
4	Palm Ave / Kendall Dr	Signalized	HCM2010	NBL	0.711	35.1	D
5	Hallmark Pkwy / Saratoga Way	Two-way stop	HCM2010	WBL	0.006	16.2	C
6	University Pkwy / Hallmark Pkwy	Signalized	HCM2010	NBL	0.591	34.4	C
7	University Pkwy / I-215 SB Ramps	Signalized	HCM2010	EBR	0.733	25.0	C
8	University Pkwy / I-215 NB Ramps	Signalized	HCM2010	NBL	0.979	56.3	E
9	University Pkwy / Kendall Dr	Signalized	HCM2010	SBL	0.588	30.0	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
#1: Palm Ave / Hallmark Pkwy

Control Type:	Two-way stop	Delay (sec / veh):	18.7
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			yes		

Volumes

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	10	208	1	84	387	1	3	3	2	4	4	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	-8	0	0	0	0	0	0	0	-2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	208	1	76	387	1	3	3	2	4	4	34
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	55	0	20	102	0	1	1	1	1	1	9
Total Analysis Volume [veh/h]	11	219	1	80	407	1	3	3	2	4	4	36
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.04
d_M, Delay for Movement [s/veh]	8.16	0.00	0.00	7.84	0.00	0.00	18.74	17.57	10.87	18.07	17.50	9.54
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	A
95th-Percentile Queue Length [veh]	0.03	0.00	0.00	0.19	0.00	0.00	0.08	0.08	0.08	0.04	0.10	0.09
95th-Percentile Queue Length [ft]	0.72	0.00	0.00	4.72	0.00	0.00	1.89	1.89	1.89	1.09	2.57	2.22
d_A, Approach Delay [s/veh]	0.39			1.28			16.33			11.04		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	1.73											
Intersection LOS	C											

Intersection Level Of Service Report
#2: Palm Ave / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	38.4
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.783

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	54	149	74	845	423	121	31	76	40	40	0	86
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-2	0	0	-1	0	0	0	0	-7	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	147	74	845	422	121	31	76	40	33	0	86
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	39	19	222	111	32	8	20	11	9	0	23
Total Analysis Volume [veh/h]	57	155	78	889	444	127	33	80	42	35	0	91
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	15	0	82	85	0	0	17	0	0	16	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no			no			no	
Maximum Recall	no	no		no	no			no			no	
Pedestrian Recall	no	no		no	no			no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	9	12	12	79	82	82	14	13
g / C, Green / Cycle	0.07	0.09	0.09	0.61	0.63	0.63	0.11	0.10
(v / s)_i Volume / Saturation Flow Rate	0.03	0.06	0.07	0.50	0.16	0.16	0.09	0.08
s, saturation flow rate [veh/h]	1774	1863	1660	1774	1863	1723	1760	1632
c, Capacity [veh/h]	123	172	153	1078	1175	1087	190	163
d1, Uniform Delay [s]	58.18	57.24	57.46	20.05	10.52	10.56	56.75	57.05
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.09	20.95	26.86	7.19	0.51	0.57	30.95	29.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

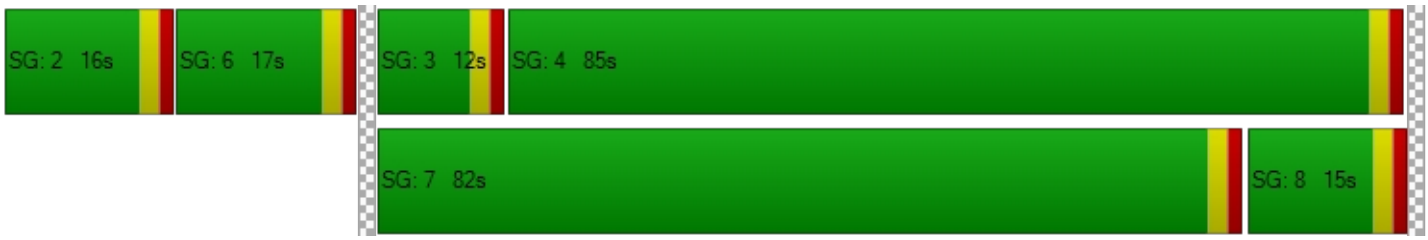
X, volume / capacity	0.46	0.70	0.74	0.82	0.25	0.25	0.82	0.77
d, Delay for Lane Group [s/veh]	70.27	78.19	84.32	27.25	11.03	11.12	87.71	86.15
Lane Group LOS	E	E	F	C	B	B	F	F
Critical Lane Group	no	no	yes	yes	no	no	yes	yes
50th-Percentile Queue Length [veh]	2.22	4.83	4.77	22.26	3.81	3.62	6.62	5.36
50th-Percentile Queue Length [ft]	55.55	120.86	119.21	556.49	95.32	90.53	165.40	134.07
95th-Percentile Queue Length [veh]	4.00	8.44	8.35	30.00	6.86	6.52	10.83	9.16
95th-Percentile Queue Length [ft]	99.99	211.01	208.74	749.93	171.58	162.95	270.86	229.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	70.27	79.58	84.32	27.25	11.06	11.12	87.71	87.71	87.71	86.15	86.15	86.15
Movement LOS	E	E	F	C	B	B	F	F	F	F	F	F
d_A, Approach Delay [s/veh]	79.02			20.92			87.71			86.15		
Approach LOS	E			C			F			F		
d_I, Intersection Delay [s/veh]	38.36											
Intersection LOS	D											
Intersection V/C	0.783											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#3: Palm Ave / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	19.8
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.460

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Right	Right	Left	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	33	231	0	0	1069	358	0	0	0	321	2	397
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-2	0	0	0	-1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	231	0	0	1068	358	0	0	0	321	2	397
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	61	0	0	281	94	0	0	0	84	1	104
Total Analysis Volume [veh/h]	33	243	0	0	1124	377	0	0	0	338	2	418
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	0	8	0	0	4	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	Lag	-
Minimum Green [s]	0	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	53	0	0	53	0	0	0	0	0	37	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall		no			no						no	
Maximum Recall		no			no						no	
Pedestrian Recall		no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	C	C		L
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00		0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00
g_i, Effective Green Time [s]	50	50	50	50		34
g / C, Green / Cycle	0.56	0.56	0.56	0.56		0.38
(v / s)_i Volume / Saturation Flow Rate	0.28	0.14	0.40	0.44		0.00
s, saturation flow rate [veh/h]	117	1695	1863	1711		1774
c, Capacity [veh/h]	145	942	1035	951		670
d1, Uniform Delay [s]	32.93	10.38	14.89	15.83		17.44
k, delay calibration	0.50	0.50	0.50	0.50		0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00
d2, Incremental Delay [s]	3.63	0.66	4.43	6.64		0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00

Lane Group Results

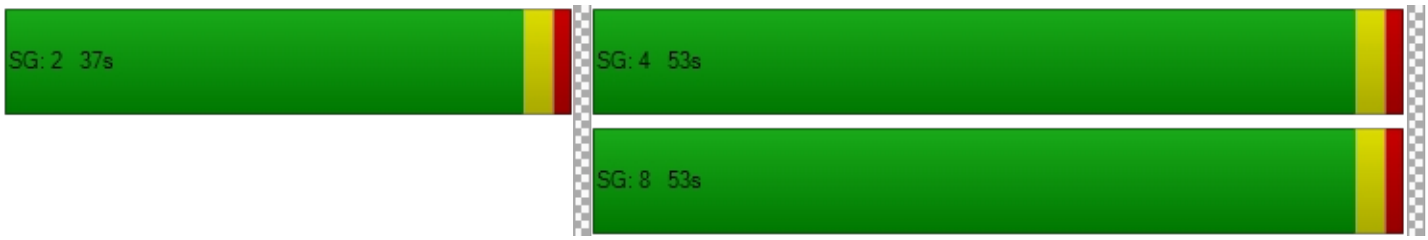
X, volume / capacity	0.23	0.26	0.73	0.79		0.00
d, Delay for Lane Group [s/veh]	36.56	11.04	19.32	22.47		17.45
Lane Group LOS	D	B	B	C		B
Critical Lane Group	no	no	no	yes		yes
50th-Percentile Queue Length [veh]	0.78	2.51	11.61	12.75		0.03
50th-Percentile Queue Length [ft]	19.57	62.68	290.36	318.77		0.67
95th-Percentile Queue Length [veh]	1.41	4.51	17.20	18.61		0.05
95th-Percentile Queue Length [ft]	35.22	112.83	430.09	465.18		1.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.56	11.04	0.00	0.00	20.37	22.47	0.00	0.00	0.00	0.00	17.45	0.00
Movement LOS	D	B			C	C					B	
d_A, Approach Delay [s/veh]	14.09			20.89			0.00			17.45		
Approach LOS	B			C			A			B		
d_I, Intersection Delay [s/veh]	19.84											
Intersection LOS	B											
Intersection V/C	0.460											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#4: Palm Ave / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	35.1
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

Intersection Setup

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Base Volume Input [veh/h]	171	286	171	82	789	106	36	72	275	346	149	139
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	-1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	171	286	171	82	788	106	36	72	275	346	149	139
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	75	45	22	207	28	9	19	72	91	39	37
Total Analysis Volume [veh/h]	180	301	180	86	829	112	38	76	289	364	157	146
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	30	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	37	37	12	34	0	10	25	0	16	31	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no	no	no	no		no	no		no	no	
Maximum Recall	no	no	no	no	no		no	no		no	no	
Pedestrian Recall	no	no	no	no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	12	34	34	9	31	31	7	22	22	13	28	28
g / C, Green / Cycle	0.13	0.38	0.38	0.10	0.34	0.34	0.08	0.24	0.24	0.14	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.11	0.05	0.26	0.26	0.02	0.04	0.18	0.11	0.08	0.09
s, saturation flow rate [veh/h]	1774	3547	1583	1774	1863	1786	1774	1863	1583	3445	1863	1583
c, Capacity [veh/h]	237	1340	598	177	642	615	138	455	387	498	580	493
d1, Uniform Delay [s]	37.62	19.04	19.66	38.31	26.06	26.06	39.11	26.78	31.42	36.83	23.32	23.52
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	20.37	0.39	1.29	9.18	7.82	8.13	4.88	0.79	12.37	9.16	1.15	1.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

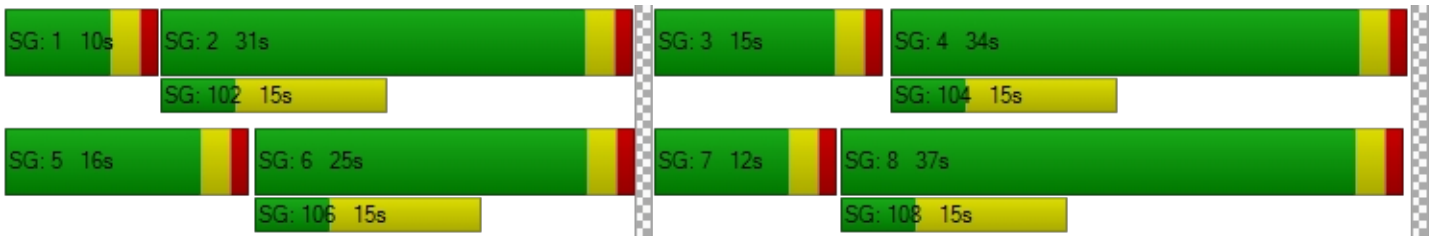
X, volume / capacity	0.76	0.22	0.30	0.48	0.75	0.75	0.28	0.17	0.75	0.73	0.27	0.30
d, Delay for Lane Group [s/veh]	57.99	19.43	20.95	47.49	33.88	34.19	43.99	27.57	43.79	45.99	24.47	25.06
Lane Group LOS	E	B	C	D	C	C	D	C	D	D	C	C
Critical Lane Group	yes	no	no	no	no	yes	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	5.10	2.16	2.79	2.23	10.13	9.77	0.97	1.37	6.99	4.40	2.64	2.52
50th-Percentile Queue Length [ft]	127.52	53.91	69.69	55.64	253.35	244.33	24.26	34.20	174.69	109.97	66.09	62.89
95th-Percentile Queue Length [veh]	8.80	3.88	5.02	4.01	15.36	14.90	1.75	2.46	11.32	7.84	4.76	4.53
95th-Percentile Queue Length [ft]	220.12	97.03	125.45	100.14	383.88	372.50	43.67	61.56	283.08	195.96	118.95	113.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.99	19.43	20.95	47.49	34.01	34.19	43.99	27.57	43.79	45.99	24.47	25.06
Movement LOS	E	B	C	D	C	C	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	30.34			35.16			40.75			36.34		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	35.11											
Intersection LOS	D											
Intersection V/C	0.711											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#5: Hallmark Pkwy / Saratoga Way

Control Type:	Two-way stop	Delay (sec / veh):	16.2
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Base Volume Input [veh/h]	144	233	12	0	116	6	0	0	60	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	-8	-2	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	233	12	0	116	0	0	0	60	2	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	61	3	0	31	0	0	0	16	1	0	0
Total Analysis Volume [veh/h]	152	245	13	0	122	0	0	0	63	2	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	7.75	0.00	0.00	7.76	0.00	0.00	14.58	16.11	8.88	16.23	15.84	9.08
Movement LOS	A	A	A	A	A	A	B	C	A	C	C	A
95th-Percentile Queue Length [veh]	0.35	0.00	0.00	0.00	0.00	0.00	0.20	0.20	0.20	0.02	0.02	0.02
95th-Percentile Queue Length [ft]	8.68	0.00	0.00	0.00	0.00	0.00	5.08	5.08	5.08	0.47	0.47	0.47
d_A, Approach Delay [s/veh]	2.87			0.00			8.88			16.23		
Approach LOS	A			A			A			C		
d_I, Intersection Delay [s/veh]	2.96											
Intersection LOS	C											

Intersection Level Of Service Report
#6: University Pkwy / Hallmark Pkwy

Control Type:	Signalized	Delay (sec / veh):	34.4
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.591

Intersection Setup

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	109	406	10	47	567	465	223	16	59	8	5	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-7	0	0	0	0	-32	-9	0	-2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	406	10	47	567	433	214	16	57	8	5	29
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	107	3	12	149	114	56	4	15	2	1	8
Total Analysis Volume [veh/h]	107	427	11	49	597	456	225	17	60	8	5	31
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	6	0	6	0	0	2	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	7	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	30	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	24	0	10	23	38	0	38	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	10	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no	no		no			no	
Maximum Recall	no	no		no	no	no		no			no	
Pedestrian Recall	no	no		no	no	no		no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	8	21	21	7	20	35	35	35	35	15	15
g / C, Green / Cycle	0.09	0.23	0.23	0.08	0.22	0.39	0.39	0.39	0.39	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.06	0.12	0.12	0.03	0.17	0.29	0.07	0.07	0.04	0.00	0.02
s, saturation flow rate [veh/h]	1774	1863	1846	1774	3547	1583	1774	1786	1583	1774	1617
c, Capacity [veh/h]	158	435	431	138	788	616	690	695	616	296	270
d1, Uniform Delay [s]	39.75	29.99	30.00	39.36	32.73	23.60	18.03	18.03	17.47	31.39	31.96
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	21.03	4.16	4.21	7.01	6.72	7.82	0.55	0.55	0.32	0.17	1.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.68	0.51	0.51	0.36	0.76	0.74	0.17	0.17	0.10	0.03	0.13
d, Delay for Lane Group [s/veh]	60.79	34.15	34.20	46.37	39.45	31.42	18.58	18.58	17.78	31.56	32.99
Lane Group LOS	E	C	C	D	D	C	B	B	B	C	C
Critical Lane Group	yes	no	no	no	yes	yes	no	no	no	no	yes
50th-Percentile Queue Length [veh]	3.19	4.56	4.53	1.29	6.68	9.28	1.71	1.72	0.83	0.16	0.74
50th-Percentile Queue Length [ft]	79.67	113.99	113.33	32.13	166.98	231.88	42.76	42.98	20.67	3.95	18.44
95th-Percentile Queue Length [veh]	5.74	8.06	8.02	2.31	10.92	14.27	3.08	3.09	1.49	0.28	1.33
95th-Percentile Queue Length [ft]	143.40	201.53	200.62	57.84	272.94	356.75	76.96	77.37	37.21	7.12	33.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.79	34.17	34.20	46.37	39.45	31.42	18.58	18.58	17.78	31.56	32.99	32.99
Movement LOS	E	C	C	D	D	C	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	39.40			36.44			18.42			32.73		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	34.44											
Intersection LOS	C											
Intersection V/C	0.591											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#7: University Pkwy / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.0
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.733

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	0	384	285	1102	896	0	123	8	200	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-3	-6	0	-32	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	381	279	1102	864	0	123	8	200	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	100	73	290	227	0	32	2	53	0	0	0
Total Analysis Volume [veh/h]	0	401	294	1160	909	0	129	8	211	0	0	0
Presence of On-Street Parking			no	no			no		no			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	30	0	42	72	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Minimum Recall		no		no	no			no				
Maximum Recall		no		no	no			no				
Pedestrian Recall		no		no	no			no				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	
g_i, Effective Green Time [s]	27	27	39	69	15	15	
g / C, Green / Cycle	0.30	0.30	0.43	0.77	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.19	0.21	0.34	0.49	0.08	0.13	
s, saturation flow rate [veh/h]	1863	1621	3445	1863	1779	1583	
c, Capacity [veh/h]	559	486	1493	1428	296	264	
d1, Uniform Delay [s]	27.11	28.07	21.79	4.79	33.86	36.05	
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	5.14	8.69	4.04	2.18	5.11	21.90	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

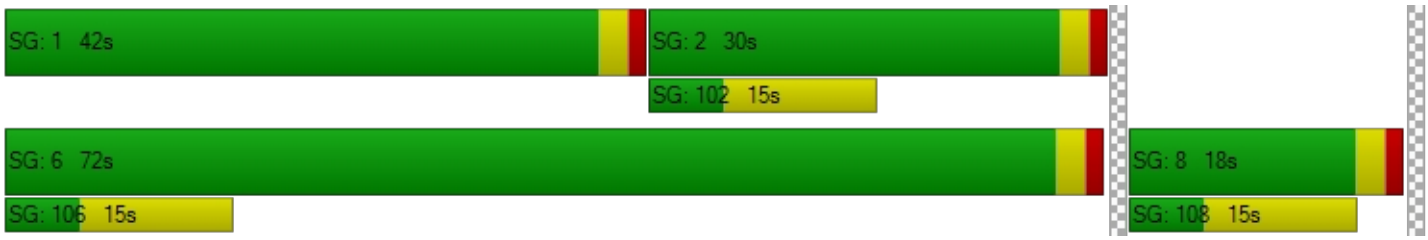
X, volume / capacity	0.62	0.71	0.78	0.64	0.46	0.80	
d, Delay for Lane Group [s/veh]	32.25	36.75	25.82	6.96	38.96	57.95	
Lane Group LOS	C	D	C	A	D	E	
Critical Lane Group	no	yes	yes	no	no	yes	
50th-Percentile Queue Length [veh]	7.04	7.64	10.70	6.10	3.08	5.97	
50th-Percentile Queue Length [ft]	176.05	190.96	267.57	152.50	77.12	149.37	
95th-Percentile Queue Length [veh]	11.39	12.17	16.07	10.15	5.55	9.98	
95th-Percentile Queue Length [ft]	284.85	304.27	401.71	253.76	138.82	249.58	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	32.85	36.75	25.82	6.96	0.00	38.96	38.96	57.95	0.00	0.00	0.00
Movement LOS		C	D	C	A		D	D	E			
d_A, Approach Delay [s/veh]	34.50			17.54			50.48			0.00		
Approach LOS	C			B			D			A		
d_I, Intersection Delay [s/veh]	25.01											
Intersection LOS	C											
Intersection V/C	0.733											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#8: University Pkwy / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	56.3
Analysis Method:	HCM2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.979

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Base Volume Input [veh/h]	60	468	0	0	1501	115	0	0	0	439	10	1568
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-3	0	0	-10	0	0	0	0	-22	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	465	0	0	1491	115	0	0	0	417	10	1568
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	122	0	0	392	30	0	0	0	110	3	413
Total Analysis Volume [veh/h]	63	489	0	0	1569	121	0	0	0	439	11	1651
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	10	52	0	0	42	0	0	0	0	0	78	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no			no						no	
Maximum Recall	no	no			no						no	
Pedestrian Recall	no	no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	R		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	7	49	39	39		75	75
g / C, Green / Cycle	0.05	0.38	0.30	0.30		0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.31	0.08		0.25	0.59
s, saturation flow rate [veh/h]	1774	3547	5074	1583		1776	2803
c, Capacity [veh/h]	96	1337	1522	475		1025	1617
d1, Uniform Delay [s]	60.33	29.27	45.50	34.49		15.58	27.50
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	30.45	0.77	31.33	1.29		1.37	27.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.66	0.37	1.03	0.25		0.44	1.02
d, Delay for Lane Group [s/veh]	90.78	30.04	76.83	35.78		16.95	55.37
Lane Group LOS	F	C	F	D		B	F
Critical Lane Group	yes	no	yes	no		no	yes
50th-Percentile Queue Length [veh]	2.85	5.71	20.65	3.10		7.86	29.94
50th-Percentile Queue Length [ft]	71.28	142.67	516.21	77.60		196.48	748.49
95th-Percentile Queue Length [veh]	5.13	9.62	28.66	5.59		12.46	39.61
95th-Percentile Queue Length [ft]	128.31	240.62	716.49	139.68		311.42	990.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	90.78	30.04	0.00	0.00	76.83	35.78	0.00	0.00	0.00	16.95	16.95	55.37
Movement LOS	F	C			F	D				B	B	F
d_A, Approach Delay [s/veh]	36.98			73.89			0.00			47.14		
Approach LOS	D			E			A			D		
d_I, Intersection Delay [s/veh]	56.26											
Intersection LOS	E											
Intersection V/C	0.979											

Sequence

Ring 1	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#9: University Pkwy / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	30.0
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.588

Intersection Setup

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Base Volume Input [veh/h]	44	1281	107	69	375	88	201	403	89	263	304	211
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	0	-2	0	-1	0	0	0	-3	-6	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	1281	105	69	374	88	201	403	86	257	304	211
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	337	28	18	98	23	53	106	23	68	80	56
Total Analysis Volume [veh/h]	45	1348	111	73	394	93	212	424	91	271	320	222
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	10	39	0	13	27	0	14	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no		no	no		no	no		no	no	
Maximum Recall	no	no		no	no		no	no		no	no	
Pedestrian Recall	no	no		no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	7	36	36	7	36	36	10	24	24	11	25	25
g / C, Green / Cycle	0.08	0.40	0.40	0.08	0.40	0.40	0.11	0.27	0.27	0.12	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.01	0.27	0.27	0.04	0.09	0.10	0.06	0.14	0.14	0.08	0.16	0.16
s, saturation flow rate [veh/h]	3445	3547	1791	1774	3547	1690	3445	1863	1750	3445	1863	1612
c, Capacity [veh/h]	268	1419	716	138	1419	676	383	497	467	421	517	448
d1, Uniform Delay [s]	38.78	22.29	22.29	39.91	17.84	17.91	37.89	28.21	28.23	37.63	27.80	27.82
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.35	2.69	5.23	13.76	0.38	0.83	5.68	4.07	4.36	7.38	4.34	5.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

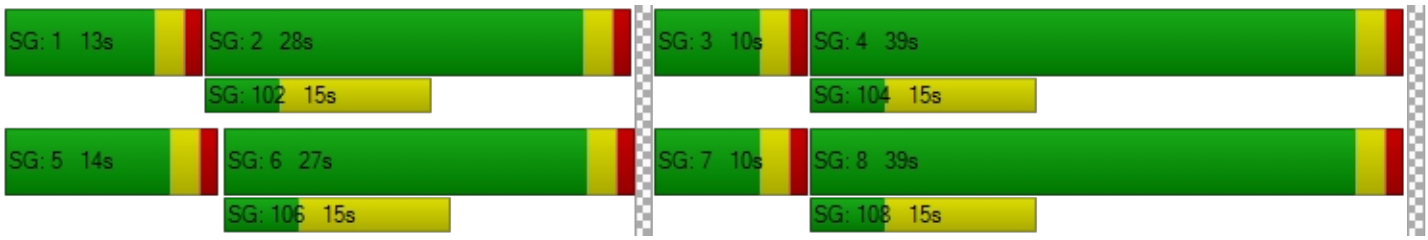
X, volume / capacity	0.17	0.68	0.68	0.53	0.23	0.24	0.55	0.53	0.54	0.64	0.56	0.56
d, Delay for Lane Group [s/veh]	40.13	24.98	27.52	53.68	18.22	18.74	43.56	32.28	32.59	45.01	32.14	32.86
Lane Group LOS	D	C	C	D	B	B	D	C	C	D	C	C
Critical Lane Group	no	no	yes	yes	no	no	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	0.51	8.61	9.20	2.06	2.25	2.31	2.49	5.33	5.07	3.23	5.84	5.16
50th-Percentile Queue Length [ft]	12.75	215.28	230.09	51.58	56.23	57.81	62.15	133.36	126.76	80.87	145.91	128.94
95th-Percentile Queue Length [veh]	0.92	13.42	14.18	3.71	4.05	4.16	4.47	9.12	8.76	5.82	9.80	8.88
95th-Percentile Queue Length [ft]	22.96	335.59	354.48	92.84	101.21	104.05	111.87	228.05	219.08	145.56	244.96	222.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.13	25.70	27.52	53.68	18.31	18.74	43.56	32.40	32.59	45.01	32.21	32.86
Movement LOS	D	C	C	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	26.26			22.99			35.68			36.66		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	30.00											
Intersection LOS	C											
Intersection V/C	0.588											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



IPT I-215 DC II

Vistro File: K:\...\SB I-215 DC II PM.vistro
Report File: K:\...\5 - BO Base PM.pdf

Scenario 5: BO 2035 PM
5/4/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Palm Ave / Hallmark Pkwy	Two-way stop	HCM2010	EBL	0.000	22.6	C
2	Palm Ave / I-215 SB Ramps	Signalized	HCM2010	EBL	0.825	47.0	D
3	Palm Ave / I-215 NB Ramps	Signalized	HCM2010	NBL	0.663	21.6	C
4	Palm Ave / Kendall Dr	Signalized	HCM2010	SBL	0.590	32.0	C
5	Hallmark Pkwy / Saratoga Way	Two-way stop	HCM2010	EBT	0.000	18.1	C
6	University Pkwy / Hallmark Pkwy	Signalized	HCM2010	NBL	0.595	33.0	C
7	University Pkwy / I-215 SB Ramps	Signalized	HCM2010	EBL	0.808	33.8	C
8	University Pkwy / I-215 NB Ramps	Signalized	HCM2010	NBL	1.257	133.4	F
9	University Pkwy / Kendall Dr	Signalized	HCM2010	WBL	0.714	34.2	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
#1: Palm Ave / Hallmark Pkwy

Control Type:	Two-way stop	Delay (sec / veh):	22.6
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			yes		

Volumes

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	2	430	18	92	157	2	0	3	1	7	2	152
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	-4	0	0	0	0	0	0	0	-10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	430	18	88	157	2	0	3	1	7	2	142
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	113	5	23	41	1	0	1	0	2	1	37
Total Analysis Volume [veh/h]	2	453	19	93	165	2	0	3	1	7	2	149
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.01	0.00	0.03	0.01	0.25
d_M, Delay for Movement [s/veh]	7.56	0.00	0.00	8.61	0.00	0.00	22.57	17.97	9.22	18.40	18.45	11.80
Movement LOS	A	A	A	A	A	A	C	C	A	C	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.28	0.00	0.00	0.04	0.04	0.04	0.08	0.44	0.43
95th-Percentile Queue Length [ft]	0.11	0.00	0.00	6.98	0.00	0.00	0.90	0.90	0.90	1.95	10.95	10.77
d_A, Approach Delay [s/veh]	0.03			3.08			15.78			12.18		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	3.13											
Intersection LOS	C											

Intersection Level Of Service Report
#2: Palm Ave / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	47.0
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.825

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	29	395	177	390	186	142	126	120	56	14	4	231
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-10	0	0	-1	0	0	0	0	-3	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	385	177	390	185	142	126	120	56	11	4	231
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	101	47	103	49	37	33	32	15	3	1	61
Total Analysis Volume [veh/h]	31	405	186	411	195	149	133	126	59	12	4	243
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	19	0	24	33	0	0	19	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no			no			no	
Maximum Recall	no	no		no	no			no			no	
Pedestrian Recall	no	no		no	no			no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	7	16	16	21	30	30	16	15
g / C, Green / Cycle	0.09	0.20	0.20	0.26	0.38	0.38	0.20	0.19
(v / s)_i Volume / Saturation Flow Rate	0.02	0.17	0.17	0.23	0.10	0.10	0.18	0.16
s, saturation flow rate [veh/h]	1774	1863	1668	1774	1863	1599	1768	1595
c, Capacity [veh/h]	155	373	334	466	699	600	354	299
d1, Uniform Delay [s]	33.90	30.71	30.79	28.32	17.34	17.36	31.21	31.53
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.87	19.05	22.07	20.84	0.92	1.08	28.08	26.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.83	0.84	0.88	0.26	0.27	0.90	0.87
d, Delay for Lane Group [s/veh]	36.77	49.76	52.86	49.15	18.26	18.44	59.30	58.43
Lane Group LOS	D	D	D	D	B	B	E	E
Critical Lane Group	no	no	yes	yes	no	no	yes	yes
50th-Percentile Queue Length [veh]	0.67	7.51	7.08	9.92	2.43	2.13	8.53	6.93
50th-Percentile Queue Length [ft]	16.81	187.65	177.08	247.98	60.81	53.26	213.33	173.16
95th-Percentile Queue Length [veh]	1.21	12.00	11.45	15.08	4.38	3.83	13.32	11.24
95th-Percentile Queue Length [ft]	30.27	299.97	286.19	377.11	109.46	95.87	333.10	281.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.77	50.49	52.86	49.15	18.27	18.44	59.30	59.30	59.30	58.43	58.43	58.43
Movement LOS	D	D	D	D	B	B	E	E	E	E	E	E
d_A, Approach Delay [s/veh]	50.52			35.12			59.30			58.43		
Approach LOS	D			D			E			E		
d_I, Intersection Delay [s/veh]	47.04											
Intersection LOS	D											
Intersection V/C	0.825											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#3: Palm Ave / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.6
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.663

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	102	571	0	0	505	234	0	0	0	229	4	508
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-8	-2	0	0	-1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	94	569	0	0	504	234	0	0	0	229	4	508
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	150	0	0	133	62	0	0	0	60	1	134
Total Analysis Volume [veh/h]	99	599	0	0	531	246	0	0	0	241	4	535
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	44	0	0	44	0	0	0	0	0	46	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall		no			no						no	
Maximum Recall		no			no						no	
Pedestrian Recall		no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	C	C		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	41	41	41	41		43	43
g / C, Green / Cycle	0.46	0.46	0.46	0.46		0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.30	0.29	0.21	0.23		0.14	0.34
s, saturation flow rate [veh/h]	719	1695	1863	1676		1775	1583
c, Capacity [veh/h]	386	772	849	763		848	756
d1, Uniform Delay [s]	23.53	18.70	16.85	17.37		14.24	18.54
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	5.55	3.86	1.78	2.42		0.86	5.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.63	0.46	0.51		0.29	0.71
d, Delay for Lane Group [s/veh]	29.08	22.56	18.63	19.78		15.10	24.05
Lane Group LOS	C	C	B	B		B	C
Critical Lane Group	yes	no	no	no		no	yes
50th-Percentile Queue Length [veh]	4.40	8.13	5.68	5.94		3.09	9.38
50th-Percentile Queue Length [ft]	109.92	203.25	142.12	148.45		77.34	234.45
95th-Percentile Queue Length [veh]	7.84	12.81	9.59	9.93		5.57	14.40
95th-Percentile Queue Length [ft]	195.89	320.16	239.87	248.36		139.20	360.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.08	23.79	0.00	0.00	18.94	19.78	0.00	0.00	0.00	15.10	15.10	24.05
Movement LOS	C	C			B	B				B	B	C
d_A, Approach Delay [s/veh]	24.54			19.21			0.00			21.24		
Approach LOS	C			B			A			C		
d_I, Intersection Delay [s/veh]	21.56											
Intersection LOS	C											
Intersection V/C	0.663											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#4: Palm Ave / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	32.0
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.590

Intersection Setup

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Base Volume Input [veh/h]	312	396	370	84	201	47	72	137	228	298	141	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-2	0	0	-1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	312	394	370	84	200	47	72	137	228	298	141	98
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	104	97	22	53	12	19	36	60	78	37	26
Total Analysis Volume [veh/h]	328	415	389	88	211	49	76	144	240	314	148	103
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	30	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	30	38	38	11	19	0	15	25	0	16	26	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no	no	no	no		no	no		no	no	
Maximum Recall	no	no	no	no	no		no	no		no	no	
Pedestrian Recall	no	no	no	no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	27	35	35	8	16	16	12	22	22	13	23	23
g / C, Green / Cycle	0.30	0.39	0.39	0.09	0.18	0.18	0.13	0.24	0.24	0.14	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.18	0.12	0.25	0.05	0.07	0.07	0.04	0.08	0.15	0.09	0.08	0.07
s, saturation flow rate [veh/h]	1774	3547	1583	1774	1863	1744	1774	1863	1583	3445	1863	1583
c, Capacity [veh/h]	532	1379	616	158	331	310	237	455	387	498	476	405
d1, Uniform Delay [s]	27.05	19.03	22.28	39.31	32.75	32.82	35.31	27.84	30.28	36.24	27.09	26.67
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.27	0.56	4.87	13.50	3.58	3.99	3.56	1.82	7.28	5.97	1.70	1.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

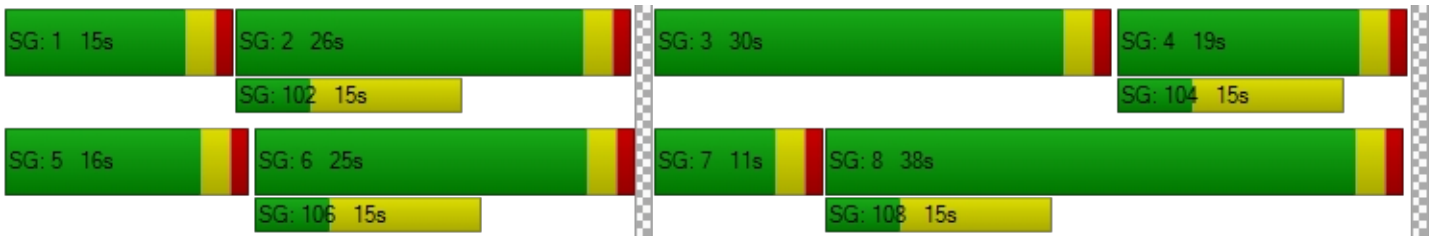
X, volume / capacity	0.62	0.30	0.63	0.56	0.40	0.41	0.32	0.32	0.62	0.63	0.31	0.25
d, Delay for Lane Group [s/veh]	32.32	19.59	27.15	52.80	36.33	36.81	38.87	29.66	37.56	42.21	28.79	28.19
Lane Group LOS	C	B	C	D	D	D	D	C	D	D	C	C
Critical Lane Group	no	no	yes	yes	no	no	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	6.66	3.02	7.22	2.43	2.85	2.77	1.73	2.73	5.31	3.61	2.75	1.90
50th-Percentile Queue Length [ft]	166.52	75.50	180.62	60.83	71.27	69.34	43.13	68.19	132.75	90.23	68.82	47.56
95th-Percentile Queue Length [veh]	10.89	5.44	11.63	4.38	5.13	4.99	3.11	4.91	9.09	6.50	4.96	3.42
95th-Percentile Queue Length [ft]	272.33	135.89	290.82	109.50	128.29	124.82	77.64	122.75	227.23	162.41	123.88	85.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.32	19.59	27.15	52.80	36.51	36.81	38.87	29.66	37.56	42.21	28.79	28.19
Movement LOS	C	B	C	D	D	D	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	25.88			40.67			35.30			36.14		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	31.98											
Intersection LOS	C											
Intersection V/C	0.590											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#5: Hallmark Pkwy / Saratoga Way

Control Type:	Two-way stop	Delay (sec / veh):	18.1
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Base Volume Input [veh/h]	93	169	0	0	357	11	11	0	188	9	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	-4	-10	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	93	169	0	0	357	7	1	0	188	9	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	44	0	0	94	2	0	0	49	2	0	0
Total Analysis Volume [veh/h]	98	178	0	0	376	7	1	0	198	9	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	8.35	0.00	0.00	7.58	0.00	0.00	17.56	18.09	10.84	17.78	17.11	9.18
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	A
95th-Percentile Queue Length [veh]	0.27	0.00	0.00	0.00	0.00	0.00	0.96	0.96	0.96	0.10	0.10	0.10
95th-Percentile Queue Length [ft]	6.83	0.00	0.00	0.00	0.00	0.00	24.06	24.06	24.06	2.39	2.39	2.39
d_A, Approach Delay [s/veh]	2.97			0.00			10.87			17.78		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	3.62											
Intersection LOS	C											

Intersection Level Of Service Report
#6: University Pkwy / Hallmark Pkwy

Control Type:	Signalized	Delay (sec / veh):	33.0
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.595

Intersection Setup

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	180	464	17	50	467	367	670	22	236	20	23	73
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-3	0	0	0	0	-11	-31	0	-8	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	177	464	17	50	467	356	639	22	228	20	23	73
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	122	4	13	123	94	168	6	60	5	6	19
Total Analysis Volume [veh/h]	186	488	18	53	492	375	673	23	240	21	24	77
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	6	0	6	0	0	2	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	7	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	30	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	17	28	0	10	21	34	0	34	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	10	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no	no		no			no	
Maximum Recall	no	no		no	no	no		no			no	
Pedestrian Recall	no	no		no	no	no		no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	14	25	25	7	18	31	31	31	31	15	15
g / C, Green / Cycle	0.16	0.28	0.28	0.08	0.20	0.34	0.34	0.34	0.34	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.10	0.14	0.14	0.03	0.14	0.24	0.20	0.20	0.15	0.01	0.06
s, saturation flow rate [veh/h]	1774	1863	1840	1774	3547	1583	1774	1780	1583	1774	1642
c, Capacity [veh/h]	276	517	511	138	709	545	611	613	545	296	274
d1, Uniform Delay [s]	35.85	27.19	27.19	39.45	33.44	25.34	24.06	24.04	22.79	31.62	33.30
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.43	3.32	3.37	7.91	5.52	6.92	3.82	3.78	2.57	0.46	3.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

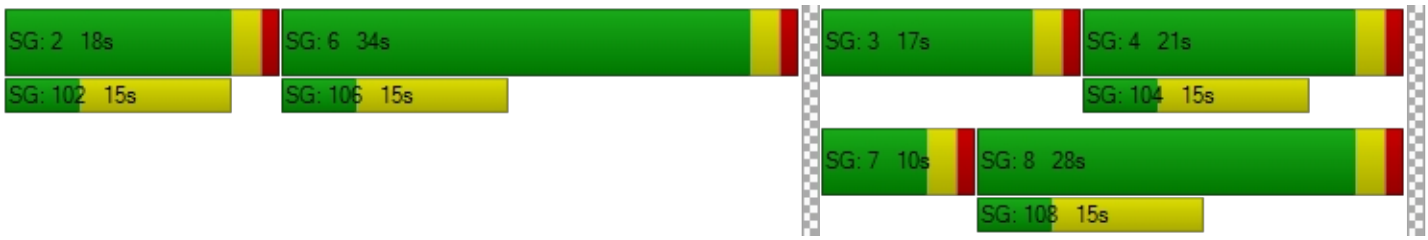
X, volume / capacity	0.67	0.49	0.49	0.38	0.69	0.69	0.57	0.57	0.44	0.07	0.37
d, Delay for Lane Group [s/veh]	48.28	30.50	30.56	47.36	38.96	32.26	27.88	27.83	25.36	32.09	37.10
Lane Group LOS	D	C	C	D	D	C	C	C	C	C	D
Critical Lane Group	yes	no	no	no	yes	yes	no	no	no	no	yes
50th-Percentile Queue Length [veh]	4.74	4.95	4.90	1.41	5.43	7.68	6.49	6.49	4.21	0.42	2.22
50th-Percentile Queue Length [ft]	118.51	123.70	122.46	35.13	135.82	192.12	162.33	162.21	105.23	10.49	55.51
95th-Percentile Queue Length [veh]	8.31	8.60	8.53	2.53	9.26	12.23	10.67	10.67	7.57	0.76	4.00
95th-Percentile Queue Length [ft]	207.77	214.90	213.21	63.23	231.38	305.78	266.80	266.64	189.35	18.88	99.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.28	30.53	30.56	47.36	38.96	32.26	27.85	27.83	25.36	32.09	37.10	37.10
Movement LOS	D	C	C	D	D	C	C	C	C	C	D	D
d_A, Approach Delay [s/veh]	35.30			36.72			27.21			36.23		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	33.00											
Intersection LOS	C											
Intersection V/C	0.595											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#7: University Pkwy / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	33.8
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.808

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	0	780	404	1095	855	0	112	4	93	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-11	-20	0	-11	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	769	384	1095	844	0	112	4	93	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	202	101	288	222	0	29	1	24	0	0	0
Total Analysis Volume [veh/h]	0	809	404	1153	888	0	118	4	98	0	0	0
Presence of On-Street Parking			no	no			no		no			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	53	0	49	102	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Minimum Recall		no		no	no			no				
Maximum Recall		no		no	no			no				
Pedestrian Recall		no		no	no			no				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	
g_i, Effective Green Time [s]	50	50	46	99	15	15	
g / C, Green / Cycle	0.42	0.42	0.38	0.83	0.13	0.13	
(v / s)_i Volume / Saturation Flow Rate	0.33	0.36	0.33	0.48	0.07	0.06	
s, saturation flow rate [veh/h]	1863	1667	3445	1863	1777	1583	
c, Capacity [veh/h]	776	695	1321	1537	222	198	
d1, Uniform Delay [s]	30.27	32.10	34.29	3.51	49.32	48.97	
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	7.69	14.28	8.20	1.59	9.44	8.60	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

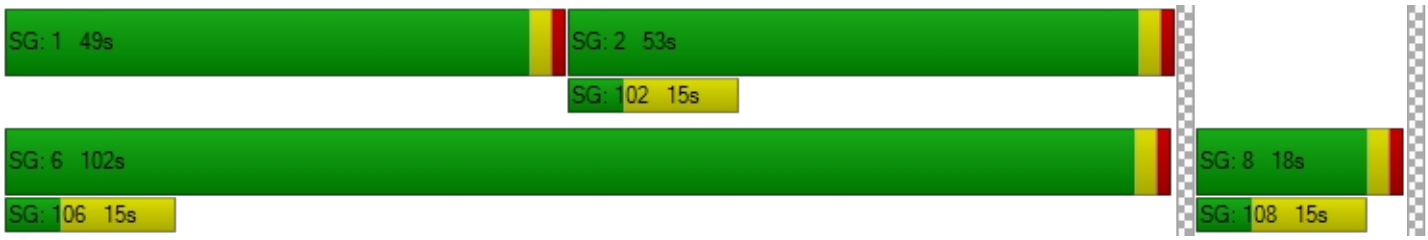
X, volume / capacity	0.78	0.87	0.87	0.58	0.55	0.50	
d, Delay for Lane Group [s/veh]	37.96	46.38	42.49	5.10	58.76	57.56	
Lane Group LOS	D	D	D	A	E	E	
Critical Lane Group	no	yes	yes	no	yes	no	
50th-Percentile Queue Length [veh]	16.55	18.54	16.82	5.68	4.03	3.22	
50th-Percentile Queue Length [ft]	413.77	463.61	420.39	142.08	100.63	80.45	
95th-Percentile Queue Length [veh]	23.22	25.61	23.54	9.59	7.25	5.79	
95th-Percentile Queue Length [ft]	580.57	640.17	588.52	239.83	181.13	144.82	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	40.07	46.38	42.49	5.10	0.00	58.76	58.76	57.56	0.00	0.00	0.00
Movement LOS		D	D	D	A		E	E	E			
d_A, Approach Delay [s/veh]	42.17			26.22			58.23			0.00		
Approach LOS	D			C			E			A		
d_I, Intersection Delay [s/veh]	33.82											
Intersection LOS	C											
Intersection V/C	0.808											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#8: University Pkwy / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	133.4
Analysis Method:	HCM2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.257

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Base Volume Input [veh/h]	146	747	0	0	1445	168	0	0	0	517	32	2166
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-11	0	0	-4	0	0	0	0	-7	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	736	0	0	1441	168	0	0	0	510	32	2166
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	194	0	0	379	44	0	0	0	134	8	570
Total Analysis Volume [veh/h]	154	775	0	0	1517	177	0	0	0	537	34	2280
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	13	47	0	0	34	0	0	0	0	0	83	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no			no						no	
Maximum Recall	no	no			no						no	
Pedestrian Recall	no	no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	R		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	10	44	31	31		80	80
g / C, Green / Cycle	0.08	0.34	0.24	0.24		0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.09	0.22	0.30	0.11		0.32	0.81
s, saturation flow rate [veh/h]	1774	3547	5074	1583		1779	2803
c, Capacity [veh/h]	136	1200	1210	378		1095	1725
d1, Uniform Delay [s]	60.00	36.40	49.50	42.44		14.16	25.00
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	115.71	2.69	121.11	4.14		1.78	149.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

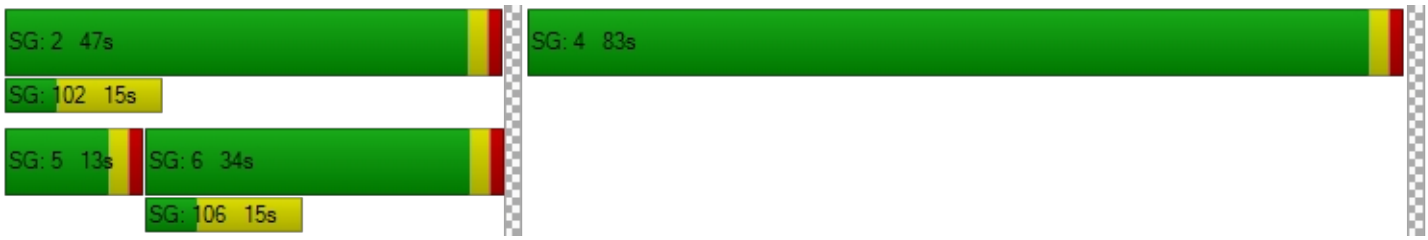
X, volume / capacity	1.13	0.65	1.25	0.47		0.52	1.32
d, Delay for Lane Group [s/veh]	175.71	39.09	170.61	46.58		15.94	174.08
Lane Group LOS	F	D	F	D		B	F
Critical Lane Group	yes	no	yes	no		no	yes
50th-Percentile Queue Length [veh]	8.89	10.86	26.61	5.34		9.79	60.38
50th-Percentile Queue Length [ft]	222.19	271.58	665.15	133.48		244.86	1509.54
95th-Percentile Queue Length [veh]	14.36	16.27	39.52	9.13		14.93	89.63
95th-Percentile Queue Length [ft]	359.02	406.71	988.07	228.21		373.17	2240.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	175.71	39.09	0.00	0.00	170.61	46.58	0.00	0.00	0.00	15.94	15.94	174.08
Movement LOS	F	D			F	D				B	B	F
d_A, Approach Delay [s/veh]	61.73			157.65			0.00			142.41		
Approach LOS	E			F			A			F		
d_I, Intersection Delay [s/veh]	133.43											
Intersection LOS	F											
Intersection V/C	1.257											

Sequence

Ring 1	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#9: University Pkwy / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	34.2
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.714

Intersection Setup

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Base Volume Input [veh/h]	326	1127	413	233	1027	119	129	411	83	179	421	114
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-3	-2	-6	0	-1	0	0	0	-1	-2	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	323	1125	407	233	1026	119	129	411	82	177	421	114
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	296	107	61	270	31	34	108	22	47	111	30
Total Analysis Volume [veh/h]	340	1184	428	245	1080	125	136	433	86	186	443	120
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	40	0	19	42	0	10	21	0	10	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no		no	no		no	no		no	no	
Maximum Recall	no	no		no	no		no	no		no	no	
Pedestrian Recall	no	no		no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	14	37	37	16	39	39	7	18	18	7	18	18
g / C, Green / Cycle	0.16	0.41	0.41	0.18	0.43	0.43	0.08	0.20	0.20	0.08	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.10	0.31	0.31	0.14	0.23	0.23	0.04	0.14	0.14	0.05	0.16	0.16
s, saturation flow rate [veh/h]	3445	3547	1623	1774	3547	1766	3445	1863	1757	3445	1863	1728
c, Capacity [veh/h]	536	1458	667	315	1537	765	268	373	351	268	373	346
d1, Uniform Delay [s]	35.60	22.63	22.78	35.30	18.69	18.69	39.85	33.60	33.64	40.46	34.14	34.17
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.64	3.68	8.20	16.99	1.28	2.55	6.72	11.14	11.98	13.85	15.07	16.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.75	0.77	0.78	0.52	0.52	0.51	0.71	0.72	0.69	0.78	0.79
d, Delay for Lane Group [s/veh]	41.24	26.31	30.98	52.29	19.97	21.24	46.56	44.74	45.61	54.31	49.21	50.49
Lane Group LOS	D	C	C	D	B	C	D	D	D	D	D	D
Critical Lane Group	no	no	yes	yes	no	no	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	3.86	10.19	10.35	6.51	6.14	6.39	1.68	6.47	6.22	2.50	7.47	7.08
50th-Percentile Queue Length [ft]	96.43	254.83	258.87	162.79	153.58	159.67	41.95	161.76	155.53	62.46	186.86	176.98
95th-Percentile Queue Length [veh]	6.94	15.43	15.63	10.70	10.21	10.53	3.02	10.64	10.31	4.50	11.96	11.44
95th-Percentile Queue Length [ft]	173.58	385.73	390.80	267.42	255.19	263.29	75.51	266.06	257.80	112.43	298.96	286.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.24	26.64	30.98	52.29	20.29	21.24	46.56	45.08	45.61	54.31	49.65	50.49
Movement LOS	D	C	C	D	C	C	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	30.13			25.78			45.46			50.94		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	34.15											
Intersection LOS	C											
Intersection V/C	0.714											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

IPT I-215 DC II

Vistro File: K:\...\SB I-215 DC II AM.vistro
Report File: K:\...\6 - BO Base + Proj AM.pdf

Scenario 6: BO + Project AM
5/4/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Palm Ave / Hallmark Pkwy	Two-way stop	HCM2010	EBL	0.012	19.2	C
2	Palm Ave / I-215 SB Ramps	Signalized	HCM2010	WBR	0.787	38.9	D
3	Palm Ave / I-215 NB Ramps	Signalized	HCM2010	NBL	0.460	19.9	B
4	Palm Ave / Kendall Dr	Signalized	HCM2010	NBL	0.711	35.1	D
5	Hallmark Pkwy / Saratoga Way	Two-way stop	HCM2010	WBL	0.006	16.2	C
6	University Pkwy / Hallmark Pkwy	Signalized	HCM2010	NBL	0.619	35.4	D
7	University Pkwy / I-215 SB Ramps	Signalized	HCM2010	EBR	0.736	25.0	C
8	University Pkwy / I-215 NB Ramps	Signalized	HCM2010	NBL	0.981	56.9	E
9	University Pkwy / Kendall Dr	Signalized	HCM2010	SBL	0.592	30.1	C
10	Georgia Blvd / North Driveway	Two-way stop	HCM2010	NEBL	0.002	8.7	A
11	Georgia Blvd / South Driveway	Two-way stop	HCM2010	NEBL	0.000	9.0	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
#1: Palm Ave / Hallmark Pkwy

Control Type:	Two-way stop	Delay (sec / veh):	19.2
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			yes		

Volumes

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	10	208	1	84	387	1	3	3	2	4	4	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	208	1	84	387	1	3	3	2	4	4	36
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	55	0	22	102	0	1	1	1	1	1	9
Total Analysis Volume [veh/h]	11	219	1	88	407	1	3	3	2	4	4	38
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.05
d_M, Delay for Movement [s/veh]	8.16	0.00	0.00	7.85	0.00	0.00	19.20	17.93	10.88	18.47	17.85	9.55
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	A
95th-Percentile Queue Length [veh]	0.03	0.00	0.00	0.21	0.00	0.00	0.08	0.08	0.08	0.04	0.11	0.09
95th-Percentile Queue Length [ft]	0.72	0.00	0.00	5.23	0.00	0.00	1.94	1.94	1.94	1.12	2.70	2.33
d_A, Approach Delay [s/veh]	0.39			1.39			16.64			11.04		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	1.82											
Intersection LOS	C											

Intersection Level Of Service Report
#2: Palm Ave / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	38.9
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.787

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	54	149	74	845	423	121	31	76	40	40	0	86
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	149	74	845	423	121	31	76	40	40	0	86
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	39	19	222	111	32	8	20	11	11	0	23
Total Analysis Volume [veh/h]	57	157	78	889	445	127	33	80	42	42	0	91
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	15	0	82	85	0	0	17	0	0	16	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no			no			no	
Maximum Recall	no	no		no	no			no			no	
Pedestrian Recall	no	no		no	no			no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	9	12	12	79	82	82	14	13
g / C, Green / Cycle	0.07	0.09	0.09	0.61	0.63	0.63	0.11	0.10
(v / s)_i Volume / Saturation Flow Rate	0.03	0.06	0.07	0.50	0.16	0.16	0.09	0.08
s, saturation flow rate [veh/h]	1774	1863	1662	1774	1863	1724	1760	1639
c, Capacity [veh/h]	123	172	153	1078	1175	1087	190	164
d1, Uniform Delay [s]	58.18	57.27	57.50	20.05	10.52	10.56	56.75	57.30
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.09	21.43	27.42	7.19	0.51	0.57	30.95	33.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

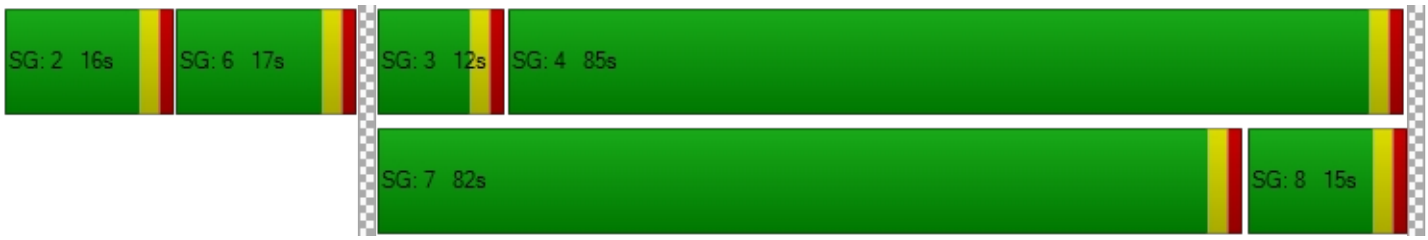
X, volume / capacity	0.46	0.70	0.74	0.82	0.25	0.26	0.82	0.81
d, Delay for Lane Group [s/veh]	70.27	78.70	84.91	27.25	11.04	11.13	87.71	91.10
Lane Group LOS	E	E	F	C	B	B	F	F
Critical Lane Group	no	no	yes	yes	no	no	yes	yes
50th-Percentile Queue Length [veh]	2.22	4.89	4.83	22.26	3.82	3.63	6.62	5.83
50th-Percentile Queue Length [ft]	55.55	122.30	120.67	556.49	95.51	90.72	165.40	145.64
95th-Percentile Queue Length [veh]	4.00	8.52	8.43	30.00	6.88	6.53	10.83	9.78
95th-Percentile Queue Length [ft]	99.99	212.99	210.75	749.93	171.92	163.30	270.86	244.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	70.27	80.13	84.91	27.25	11.07	11.13	87.71	87.71	87.71	91.10	91.10	91.10
Movement LOS	E	F	F	C	B	B	F	F	F	F	F	F
d_A, Approach Delay [s/veh]	79.48			20.92			87.71			91.10		
Approach LOS	E			C			F			F		
d_I, Intersection Delay [s/veh]	38.94											
Intersection LOS	D											
Intersection V/C	0.787											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#3: Palm Ave / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	19.9
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.460

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Right	Right	Left	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	33	231	0	0	1069	358	0	0	0	321	2	397
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	231	0	0	1069	358	0	0	0	321	2	397
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	61	0	0	281	94	0	0	0	84	1	104
Total Analysis Volume [veh/h]	35	243	0	0	1125	377	0	0	0	338	2	418
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	0	8	0	0	4	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	Lag	-
Minimum Green [s]	0	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	53	0	0	53	0	0	0	0	0	37	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall		no			no						no	
Maximum Recall		no			no						no	
Pedestrian Recall		no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	C	C		L
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00		0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00
g_i, Effective Green Time [s]	50	50	50	50		34
g / C, Green / Cycle	0.56	0.56	0.56	0.56		0.38
(v / s)_i Volume / Saturation Flow Rate	0.30	0.14	0.40	0.44		0.00
s, saturation flow rate [veh/h]	116	1695	1863	1711		1774
c, Capacity [veh/h]	145	942	1035	951		670
d1, Uniform Delay [s]	33.18	10.38	14.89	15.84		17.44
k, delay calibration	0.50	0.50	0.50	0.50		0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00
d2, Incremental Delay [s]	3.93	0.66	4.44	6.65		0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00

Lane Group Results

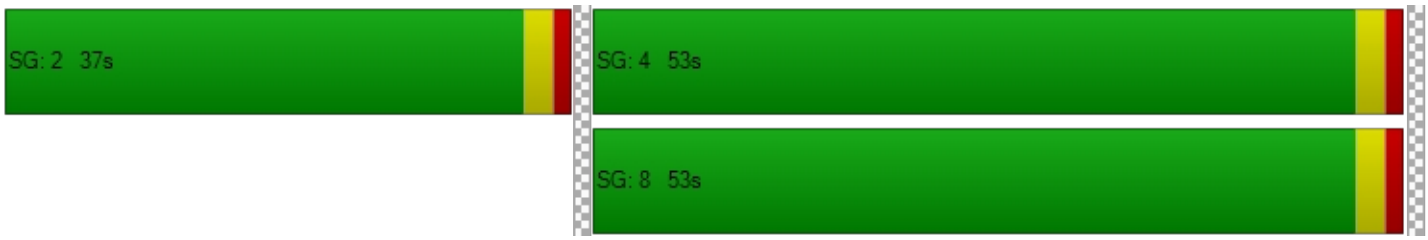
X, volume / capacity	0.24	0.26	0.73	0.79		0.00
d, Delay for Lane Group [s/veh]	37.11	11.04	19.34	22.50		17.45
Lane Group LOS	D	B	B	C		B
Critical Lane Group	no	no	no	yes		yes
50th-Percentile Queue Length [veh]	0.84	2.51	11.63	12.77		0.03
50th-Percentile Queue Length [ft]	20.95	62.68	290.72	319.20		0.67
95th-Percentile Queue Length [veh]	1.51	4.51	17.22	18.63		0.05
95th-Percentile Queue Length [ft]	37.70	112.83	430.54	465.71		1.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.11	11.04	0.00	0.00	20.39	22.50	0.00	0.00	0.00	0.00	17.45	0.00
Movement LOS	D	B			C	C					B	
d_A, Approach Delay [s/veh]	14.32			20.92			0.00			17.45		
Approach LOS	B			C			A			B		
d_I, Intersection Delay [s/veh]	19.88											
Intersection LOS	B											
Intersection V/C	0.460											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#4: Palm Ave / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	35.1
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

Intersection Setup

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Base Volume Input [veh/h]	171	286	171	82	789	106	36	72	275	346	149	139
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	171	286	171	82	789	106	36	72	275	346	149	139
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	75	45	22	208	28	9	19	72	91	39	37
Total Analysis Volume [veh/h]	180	301	180	86	831	112	38	76	289	364	157	146
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	30	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	37	37	12	34	0	10	25	0	16	31	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no	no	no	no		no	no		no	no	
Maximum Recall	no	no	no	no	no		no	no		no	no	
Pedestrian Recall	no	no	no	no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	12	34	34	9	31	31	7	22	22	13	28	28
g / C, Green / Cycle	0.13	0.38	0.38	0.10	0.34	0.34	0.08	0.24	0.24	0.14	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.11	0.05	0.26	0.26	0.02	0.04	0.18	0.11	0.08	0.09
s, saturation flow rate [veh/h]	1774	3547	1583	1774	1863	1786	1774	1863	1583	3445	1863	1583
c, Capacity [veh/h]	237	1340	598	177	642	615	138	455	387	498	580	493
d1, Uniform Delay [s]	37.62	19.04	19.66	38.31	26.08	26.08	39.11	26.78	31.42	36.83	23.32	23.52
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	20.37	0.39	1.29	9.18	7.87	8.19	4.88	0.79	12.37	9.16	1.15	1.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

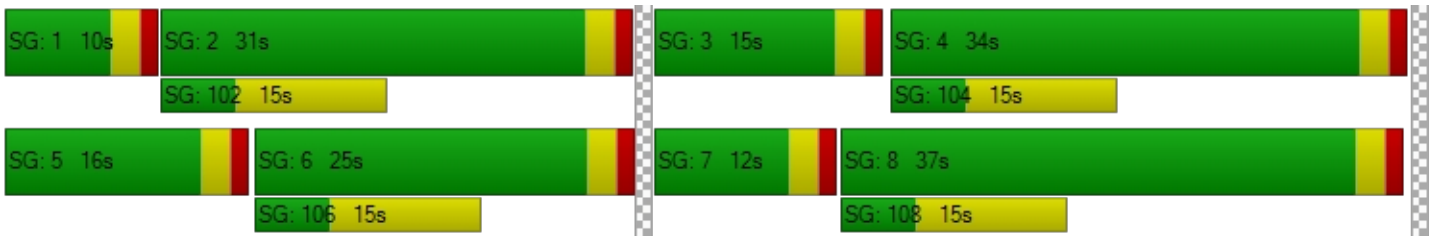
X, volume / capacity	0.76	0.22	0.30	0.48	0.75	0.75	0.28	0.17	0.75	0.73	0.27	0.30
d, Delay for Lane Group [s/veh]	57.99	19.43	20.95	47.49	33.95	34.27	43.99	27.57	43.79	45.99	24.47	25.06
Lane Group LOS	E	B	C	D	C	C	D	C	D	D	C	C
Critical Lane Group	yes	no	no	no	no	yes	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	5.10	2.16	2.79	2.23	10.17	9.81	0.97	1.37	6.99	4.40	2.64	2.52
50th-Percentile Queue Length [ft]	127.52	53.91	69.69	55.64	254.23	245.19	24.26	34.20	174.69	109.97	66.09	62.89
95th-Percentile Queue Length [veh]	8.80	3.88	5.02	4.01	15.40	14.94	1.75	2.46	11.32	7.84	4.76	4.53
95th-Percentile Queue Length [ft]	220.12	97.03	125.45	100.14	384.97	373.59	43.67	61.56	283.08	195.96	118.95	113.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.99	19.43	20.95	47.49	34.09	34.27	43.99	27.57	43.79	45.99	24.47	25.06
Movement LOS	E	B	C	D	C	C	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	30.34			35.23			40.75			36.34		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	35.13											
Intersection LOS	D											
Intersection V/C	0.711											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#5: Hallmark Pkwy / Saratoga Way

Control Type:	Two-way stop	Delay (sec / veh):	16.2
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Base Volume Input [veh/h]	144	233	12	0	116	6	0	0	60	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	233	12	0	116	6	0	0	60	2	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	61	3	0	31	2	0	0	16	1	0	0
Total Analysis Volume [veh/h]	152	245	13	0	122	6	0	0	63	2	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	7.76	0.00	0.00	7.76	0.00	0.00	14.64	16.17	8.90	16.23	15.94	9.08
Movement LOS	A	A	A	A	A	A	B	C	A	C	C	A
95th-Percentile Queue Length [veh]	0.35	0.00	0.00	0.00	0.00	0.00	0.20	0.20	0.20	0.02	0.02	0.02
95th-Percentile Queue Length [ft]	8.73	0.00	0.00	0.00	0.00	0.00	5.10	5.10	5.10	0.47	0.47	0.47
d_A, Approach Delay [s/veh]	2.88			0.00			8.90			16.23		
Approach LOS	A			A			A			C		
d_I, Intersection Delay [s/veh]	2.94											
Intersection LOS	C											

Intersection Level Of Service Report
#6: University Pkwy / Hallmark Pkwy

Control Type:	Signalized	Delay (sec / veh):	35.4
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.619

Intersection Setup

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	109	406	10	47	567	465	223	16	59	8	5	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	406	10	47	567	465	223	16	59	8	5	29
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	107	3	12	149	122	59	4	16	2	1	8
Total Analysis Volume [veh/h]	115	427	11	49	597	489	235	17	62	8	5	31
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	6	0	6	0	0	2	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	7	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	30	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	24	0	10	23	38	0	38	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	10	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no	no		no			no	
Maximum Recall	no	no		no	no	no		no			no	
Pedestrian Recall	no	no		no	no	no		no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	8	21	21	7	20	35	35	35	35	15	15
g / C, Green / Cycle	0.09	0.23	0.23	0.08	0.22	0.39	0.39	0.39	0.39	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.06	0.12	0.12	0.03	0.17	0.31	0.07	0.07	0.04	0.00	0.02
s, saturation flow rate [veh/h]	1774	1863	1846	1774	3547	1583	1774	1785	1583	1774	1617
c, Capacity [veh/h]	158	435	431	138	788	616	690	694	616	296	270
d1, Uniform Delay [s]	39.94	29.99	30.00	39.36	32.73	24.32	18.09	18.09	17.49	31.39	31.96
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	25.44	4.16	4.21	7.01	6.72	10.16	0.58	0.58	0.33	0.17	1.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.73	0.51	0.51	0.36	0.76	0.79	0.18	0.18	0.10	0.03	0.13
d, Delay for Lane Group [s/veh]	65.38	34.15	34.20	46.37	39.45	34.48	18.67	18.66	17.82	31.56	32.99
Lane Group LOS	E	C	C	D	D	C	B	B	B	C	C
Critical Lane Group	yes	no	no	no	yes	yes	no	no	no	no	yes
50th-Percentile Queue Length [veh]	3.56	4.56	4.53	1.29	6.68	10.51	1.79	1.80	0.86	0.16	0.74
50th-Percentile Queue Length [ft]	89.01	113.99	113.32	32.13	166.98	262.67	44.68	44.91	21.39	3.95	18.44
95th-Percentile Queue Length [veh]	6.41	8.06	8.02	2.31	10.92	15.82	3.22	3.23	1.54	0.28	1.33
95th-Percentile Queue Length [ft]	160.22	201.54	200.61	57.84	272.94	395.57	80.42	80.83	38.50	7.12	33.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.38	34.17	34.20	46.37	39.45	34.48	18.66	18.66	17.82	31.56	32.99	32.99
Movement LOS	E	C	C	D	D	C	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	40.66			37.61			18.50			32.73		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	35.40											
Intersection LOS	D											
Intersection V/C	0.619											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#7: University Pkwy / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.0
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.736

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	0	384	285	1102	896	0	123	8	200	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	384	285	1102	896	0	123	8	200	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	101	75	290	236	0	32	2	53	0	0	0
Total Analysis Volume [veh/h]	0	404	300	1160	943	0	129	8	211	0	0	0
Presence of On-Street Parking			no	no			no		no			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	30	0	42	72	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Minimum Recall		no		no	no			no				
Maximum Recall		no		no	no			no				
Pedestrian Recall		no		no	no			no				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	
g_i, Effective Green Time [s]	27	27	39	69	15	15	
g / C, Green / Cycle	0.30	0.30	0.43	0.77	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.19	0.22	0.34	0.51	0.08	0.13	
s, saturation flow rate [veh/h]	1863	1619	3445	1863	1779	1583	
c, Capacity [veh/h]	559	486	1493	1428	296	264	
d1, Uniform Delay [s]	27.19	28.17	21.79	4.96	33.86	36.05	
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	5.31	9.08	4.04	2.41	5.11	21.90	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

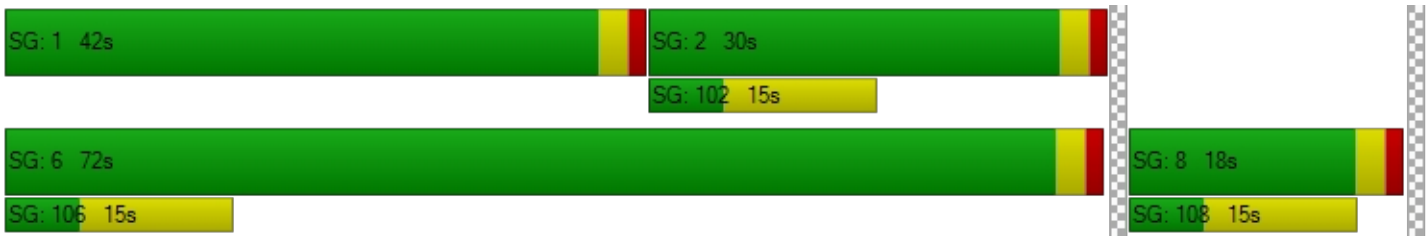
X, volume / capacity	0.63	0.72	0.78	0.66	0.46	0.80	
d, Delay for Lane Group [s/veh]	32.50	37.26	25.82	7.37	38.96	57.95	
Lane Group LOS	C	D	C	A	D	E	
Critical Lane Group	no	yes	yes	no	no	yes	
50th-Percentile Queue Length [veh]	7.17	7.80	10.70	6.59	3.08	5.97	
50th-Percentile Queue Length [ft]	179.20	194.99	267.57	164.73	77.12	149.37	
95th-Percentile Queue Length [veh]	11.56	12.38	16.07	10.80	5.55	9.98	
95th-Percentile Queue Length [ft]	288.97	309.50	401.71	269.98	138.82	249.58	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	33.11	37.26	25.82	7.37	0.00	38.96	38.96	57.95	0.00	0.00	0.00
Movement LOS		C	D	C	A		D	D	E			
d_A, Approach Delay [s/veh]	34.88			17.55			50.48			0.00		
Approach LOS	C			B			D			A		
d_I, Intersection Delay [s/veh]	25.05											
Intersection LOS	C											
Intersection V/C	0.736											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#8: University Pkwy / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	56.9
Analysis Method:	HCM2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.981

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Base Volume Input [veh/h]	60	468	0	0	1501	115	0	0	0	439	10	1568
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	468	0	0	1501	115	0	0	0	439	10	1568
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	123	0	0	395	30	0	0	0	116	3	413
Total Analysis Volume [veh/h]	63	493	0	0	1580	121	0	0	0	462	11	1651
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	10	52	0	0	42	0	0	0	0	0	78	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no			no						no	
Maximum Recall	no	no			no						no	
Pedestrian Recall	no	no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	R		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	7	49	39	39		75	75
g / C, Green / Cycle	0.05	0.38	0.30	0.30		0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.31	0.08		0.27	0.59
s, saturation flow rate [veh/h]	1774	3547	5074	1583		1776	2803
c, Capacity [veh/h]	96	1337	1522	475		1025	1617
d1, Uniform Delay [s]	60.33	29.31	45.50	34.49		15.86	27.50
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	30.45	0.78	33.54	1.29		1.50	27.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.66	0.37	1.04	0.25		0.46	1.02
d, Delay for Lane Group [s/veh]	90.78	30.09	79.04	35.78		17.36	55.37
Lane Group LOS	F	C	F	D		B	F
Critical Lane Group	yes	no	yes	no		no	yes
50th-Percentile Queue Length [veh]	2.85	5.76	20.96	3.10		8.42	29.94
50th-Percentile Queue Length [ft]	71.28	144.04	524.01	77.60		210.41	748.49
95th-Percentile Queue Length [veh]	5.13	9.70	29.16	5.59		13.17	39.61
95th-Percentile Queue Length [ft]	128.31	242.45	729.10	139.68		329.35	990.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	90.78	30.09	0.00	0.00	79.04	35.78	0.00	0.00	0.00	17.36	17.36	55.37
Movement LOS	F	C			F	D				B	B	F
d_A, Approach Delay [s/veh]	36.97			75.96			0.00			46.90		
Approach LOS	D			E			A			D		
d_I, Intersection Delay [s/veh]	56.93											
Intersection LOS	E											
Intersection V/C	0.981											

Sequence

Ring 1	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#9: University Pkwy / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	30.1
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.592

Intersection Setup

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Base Volume Input [veh/h]	44	1281	107	69	375	88	201	403	89	263	304	211
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	1281	107	69	375	88	201	403	89	263	304	211
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	337	28	18	99	23	53	106	23	69	80	56
Total Analysis Volume [veh/h]	46	1348	113	73	395	93	212	424	94	277	320	222
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	10	39	0	13	27	0	14	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no		no	no		no	no		no	no	
Maximum Recall	no	no		no	no		no	no		no	no	
Pedestrian Recall	no	no		no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	7	36	36	7	36	36	10	24	24	11	25	25
g / C, Green / Cycle	0.08	0.40	0.40	0.08	0.40	0.40	0.11	0.27	0.27	0.12	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.01	0.27	0.27	0.04	0.09	0.10	0.06	0.14	0.14	0.08	0.16	0.16
s, saturation flow rate [veh/h]	3445	3547	1790	1774	3547	1691	3445	1863	1747	3445	1863	1612
c, Capacity [veh/h]	268	1419	716	138	1419	676	383	497	466	421	517	448
d1, Uniform Delay [s]	38.79	22.31	22.31	39.91	17.84	17.91	37.89	28.25	28.26	37.70	27.80	27.82
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.39	2.70	5.26	13.76	0.38	0.83	5.68	4.12	4.42	7.82	4.34	5.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

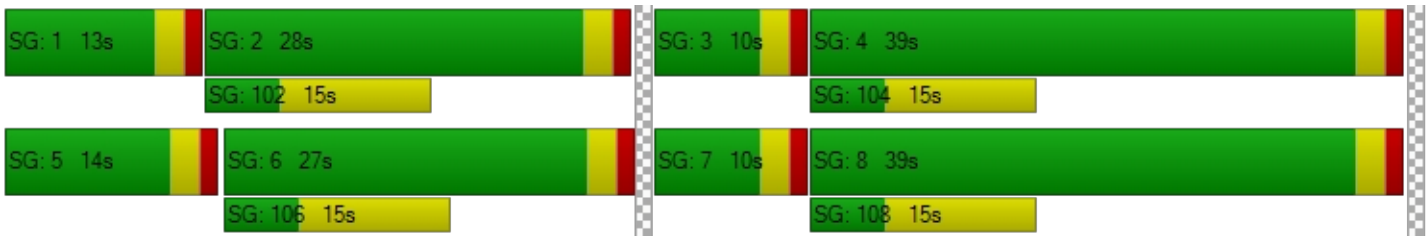
X, volume / capacity	0.17	0.68	0.68	0.53	0.23	0.24	0.55	0.54	0.54	0.66	0.56	0.56
d, Delay for Lane Group [s/veh]	40.18	25.01	27.57	53.68	18.22	18.74	43.56	32.37	32.69	45.52	32.15	32.86
Lane Group LOS	D	C	C	D	B	B	D	C	C	D	C	C
Critical Lane Group	no	no	yes	yes	no	no	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	0.52	8.63	9.22	2.06	2.25	2.32	2.49	5.38	5.11	3.33	5.84	5.16
50th-Percentile Queue Length [ft]	13.05	215.78	230.53	51.58	56.35	57.94	62.15	134.48	127.64	83.20	145.93	128.91
95th-Percentile Queue Length [veh]	0.94	13.45	14.20	3.71	4.06	4.17	4.47	9.18	8.81	5.99	9.80	8.88
95th-Percentile Queue Length [ft]	23.48	336.24	355.03	92.84	101.44	104.29	111.87	229.57	220.28	149.76	244.99	222.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.18	25.72	27.57	53.68	18.31	18.74	43.56	32.49	32.69	45.52	32.21	32.86
Movement LOS	D	C	C	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	26.30			22.99			35.73			36.89		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	30.09											
Intersection LOS	C											
Intersection V/C	0.592											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#10: Georgia Blvd / North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	North Driveway		Georgia Blvd		Georgia Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	North Driveway		Georgia Blvd		Georgia Blvd	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	2	3	13	0	2	6
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	3	13	0	2	6
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	3	0	1	2
Total Analysis Volume [veh/h]	2	3	14	0	2	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	no		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	no		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.72	8.36	7.25	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.01	0.01	0.03	0.03	0.00	0.00
95th-Percentile Queue Length [ft]	0.36	0.36	0.66	0.66	0.00	0.00
d_A, Approach Delay [s/veh]	8.50		7.25		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.33					
Intersection LOS	A					

Intersection Level Of Service Report
#11: Georgia Blvd / South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	South Driveway		Georgia Blvd		Georgia Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	South Driveway		Georgia Blvd		Georgia Blvd	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	8	26	13	3	2
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	8	26	13	3	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	7	3	1	1
Total Analysis Volume [veh/h]	0	8	27	14	3	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	no		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	no		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.95	8.36	7.27	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.02	0.02	0.08	0.08	0.00	0.00
95th-Percentile Queue Length [ft]	0.56	0.56	1.95	1.95	0.00	0.00
d_A, Approach Delay [s/veh]	8.36		4.78		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.87					
Intersection LOS	A					

IPT I-215 DC II

Vistro File: K:\...\SB I-215 DC II PM.vistro
Report File: K:\...\6 - BO Base + Project PM.pdf

Scenario 6: BO + Project PM
4/4/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Palm Ave / Hallmark Pkwy	Two-way stop	HCM2010	EBL	0.000	23.3	C
2	Palm Ave / I-215 SB Ramps	Signalized	HCM2010	EBL	0.876	54.7	D
3	Palm Ave / I-215 NB Ramps	Signalized	HCM2010	NBL	0.713	23.1	C
4	Palm Ave / Kendall Dr	Signalized	HCM2010	SBL	0.623	33.0	C
5	Hallmark Pkwy / Saratoga Way	Two-way stop	HCM2010	EBT	0.000	18.6	C
6	University Pkwy / Hallmark Pkwy	Signalized	HCM2010	NBL	0.638	34.8	C
7	University Pkwy / I-215 SB Ramps	Signalized	HCM2010	EBL	0.864	38.9	D
8	University Pkwy / I-215 NB Ramps	Signalized	HCM2010	WBR	1.328	156.6	F
9	University Pkwy / Kendall Dr	Signalized	HCM2010	WBL	0.758	36.6	D
10	Georgia Blvd / North Driveway	Two-way stop	HCM2010	NEBL	0.000	8.5	A
11	Georgia Blvd / South Driveway	Two-way stop	HCM2010	NEBL	0.000	8.5	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
#1: Palm Ave / Hallmark Pkwy

Control Type:	Two-way stop	Delay (sec / veh):	23.3
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			yes		

Volumes

Name	Palm Ave			Palm Ave			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	2	430	18	92	157	2	0	3	1	7	2	152
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	430	18	92	157	2	0	3	1	7	2	152
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	113	5	24	41	1	0	1	0	2	1	40
Total Analysis Volume [veh/h]	2	453	19	97	165	2	0	3	1	7	2	160
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.01	0.00	0.03	0.01	0.26
d_M, Delay for Movement [s/veh]	7.56	0.00	0.00	8.63	0.00	0.00	23.28	18.17	9.22	18.61	18.71	11.87
Movement LOS	A	A	A	A	A	A	C	C	A	C	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.29	0.00	0.00	0.04	0.04	0.04	0.08	0.47	0.47
95th-Percentile Queue Length [ft]	0.11	0.00	0.00	7.31	0.00	0.00	0.91	0.91	0.91	1.98	11.85	11.66
d_A, Approach Delay [s/veh]	0.03			3.17			15.93			12.23		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	3.27											
Intersection LOS	C											

Intersection Level Of Service Report
#2: Palm Ave / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	54.7
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.876

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	29	395	177	390	186	142	126	120	56	14	4	231
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	395	177	390	186	142	126	120	56	14	4	231
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	104	47	103	49	37	33	32	15	4	1	61
Total Analysis Volume [veh/h]	31	416	186	411	196	149	133	126	59	15	4	243
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	19	0	24	33	0	0	19	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no			no			no	
Maximum Recall	no	no		no	no			no			no	
Pedestrian Recall	no	no		no	no			no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	7	16	16	21	30	30	16	15
g / C, Green / Cycle	0.09	0.20	0.20	0.26	0.38	0.38	0.20	0.19
(v / s)_i Volume / Saturation Flow Rate	0.02	0.18	0.18	0.24	0.10	0.11	0.19	0.17
s, saturation flow rate [veh/h]	1681	1765	1583	1681	1765	1516	1675	1513
c, Capacity [veh/h]	147	353	317	441	662	568	335	284
d1, Uniform Delay [s]	33.93	31.17	31.26	28.80	17.45	17.47	31.60	31.94
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.24	27.29	31.27	28.74	1.05	1.24	37.85	36.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.21	0.89	0.91	0.93	0.28	0.28	0.95	0.92
d, Delay for Lane Group [s/veh]	37.17	58.46	62.53	57.54	18.51	18.71	69.45	68.92
Lane Group LOS	D	E	E	E	B	B	E	E
Critical Lane Group	no	no	yes	yes	no	no	yes	yes
50th-Percentile Queue Length [veh]	0.68	8.40	7.96	10.87	2.47	2.16	9.37	7.72
50th-Percentile Queue Length [ft]	17.04	209.89	199.07	271.72	61.69	54.10	234.20	193.04
95th-Percentile Queue Length [veh]	1.23	13.15	12.59	16.28	4.44	3.89	14.39	12.28
95th-Percentile Queue Length [ft]	30.68	328.69	314.76	406.89	111.04	97.37	359.69	306.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.17	59.45	62.53	57.54	18.52	18.71	69.45	69.45	69.45	68.92	68.92	68.92
Movement LOS	D	E	E	E	B	B	E	E	E	E	E	E
d_A, Approach Delay [s/veh]	59.26			39.77			69.45			68.92		
Approach LOS	E			D			E			E		
d_I, Intersection Delay [s/veh]	54.71											
Intersection LOS	D											
Intersection V/C	0.876											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#3: Palm Ave / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	23.1
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Palm Ave			Palm Ave			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	102	571	0	0	505	234	0	0	0	229	4	508
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	571	0	0	505	234	0	0	0	229	4	508
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	150	0	0	133	62	0	0	0	60	1	134
Total Analysis Volume [veh/h]	107	601	0	0	532	246	0	0	0	241	4	535
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	44	0	0	44	0	0	0	0	0	46	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall		no			no						no	
Maximum Recall		no			no						no	
Pedestrian Recall		no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	C	C		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	41	41	41	41		43	43
g / C, Green / Cycle	0.46	0.46	0.46	0.46		0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.32	0.32	0.22	0.25		0.15	0.36
s, saturation flow rate [veh/h]	621	1606	1765	1588		1682	1500
c, Capacity [veh/h]	344	732	804	723		804	717
d1, Uniform Delay [s]	25.81	19.48	17.11	17.67		14.36	19.08
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.13	5.32	2.08	2.86		0.98	6.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.69	0.48	0.54		0.30	0.75
d, Delay for Lane Group [s/veh]	32.94	24.80	19.19	20.53		15.34	26.05
Lane Group LOS	C	C	B	C		B	C
Critical Lane Group	yes	no	no	no		no	yes
50th-Percentile Queue Length [veh]	4.46	9.01	5.82	6.10		3.14	9.85
50th-Percentile Queue Length [ft]	111.41	225.27	145.43	152.53		78.39	246.16
95th-Percentile Queue Length [veh]	7.92	13.93	9.77	10.15		5.64	14.99
95th-Percentile Queue Length [ft]	197.97	348.35	244.32	253.80		141.10	374.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.94	26.09	0.00	0.00	19.55	20.53	0.00	0.00	0.00	15.34	15.34	26.05
Movement LOS	C	C			B	C				B	B	C
d_A, Approach Delay [s/veh]	27.12			19.86			0.00			22.68		
Approach LOS	C			B			A			C		
d_I, Intersection Delay [s/veh]	23.10											
Intersection LOS	C											
Intersection V/C	0.713											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#4: Palm Ave / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	33.0
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.623

Intersection Setup

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Palm Ave			Palm Ave			Little Leage Dr			Kendall Dr		
Base Volume Input [veh/h]	312	396	370	84	201	47	72	137	228	298	141	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	312	396	370	84	201	47	72	137	228	298	141	98
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	104	97	22	53	12	19	36	60	78	37	26
Total Analysis Volume [veh/h]	328	417	389	88	212	49	76	144	240	314	148	103
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	30	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	30	38	38	11	19	0	15	25	0	16	26	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no	no	no	no		no	no		no	no	
Maximum Recall	no	no	no	no	no		no	no		no	no	
Pedestrian Recall	no	no	no	no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	27	35	35	8	16	16	12	22	22	13	23	23
g / C, Green / Cycle	0.30	0.39	0.39	0.09	0.18	0.18	0.13	0.24	0.24	0.14	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.20	0.12	0.26	0.05	0.08	0.08	0.05	0.08	0.16	0.10	0.08	0.07
s, saturation flow rate [veh/h]	1681	3360	1500	1681	1765	1653	1681	1765	1500	3264	1765	1500
c, Capacity [veh/h]	504	1307	583	149	314	294	224	431	367	471	451	383
d1, Uniform Delay [s]	27.40	19.19	22.69	39.42	32.90	32.97	35.40	27.97	30.58	36.45	27.22	26.78
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.39	0.64	5.94	15.90	4.16	4.64	4.07	2.08	8.80	7.26	1.94	1.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

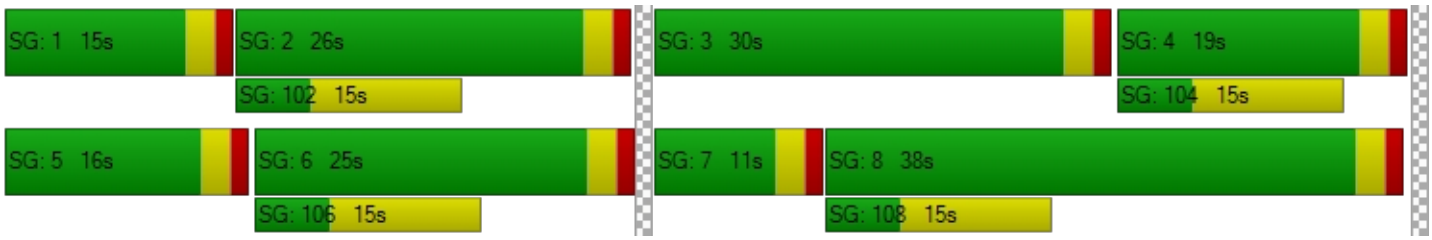
X, volume / capacity	0.65	0.32	0.67	0.59	0.42	0.44	0.34	0.33	0.65	0.67	0.33	0.27
d, Delay for Lane Group [s/veh]	33.78	19.83	28.63	55.32	37.06	37.61	39.47	30.05	39.38	43.71	29.16	28.49
Lane Group LOS	C	B	C	E	D	D	D	C	D	D	C	C
Critical Lane Group	no	no	yes	yes	no	no	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	6.85	3.07	7.47	2.51	2.91	2.83	1.75	2.76	5.47	3.69	2.78	1.92
50th-Percentile Queue Length [ft]	171.27	76.68	186.80	62.68	72.63	70.74	43.71	68.96	136.73	92.25	69.58	48.05
95th-Percentile Queue Length [veh]	11.14	5.52	11.95	4.51	5.23	5.09	3.15	4.96	9.30	6.64	5.01	3.46
95th-Percentile Queue Length [ft]	278.59	138.02	298.87	112.83	130.73	127.33	78.67	124.12	232.62	166.05	125.25	86.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	33.78	19.83	28.63	55.32	37.27	37.61	39.47	30.05	39.38	43.71	29.16	28.49
Movement LOS	C	B	C	E	D	D	D	C	D	D	C	C
d_A, Approach Delay [s/veh]	26.89			41.87			36.48			37.12		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	33.04											
Intersection LOS	C											
Intersection V/C	0.623											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#5: Hallmark Pkwy / Saratoga Way

Control Type:	Two-way stop	Delay (sec / veh):	18.6
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name	Hallmark Pkwy			Hallmark Pkwy			Saratoga Way			Saratoga Way		
Base Volume Input [veh/h]	93	169	0	0	357	11	11	0	188	9	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	93	169	0	0	357	11	11	0	188	9	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	44	0	0	94	3	3	0	49	2	0	0
Total Analysis Volume [veh/h]	98	178	0	0	376	12	12	0	198	9	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.24	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	8.37	0.00	0.00	7.58	0.00	0.00	18.03	18.56	11.28	17.80	17.19	9.18
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	A
95th-Percentile Queue Length [veh]	0.27	0.00	0.00	0.00	0.00	0.00	1.15	1.15	1.15	0.10	0.10	0.10
95th-Percentile Queue Length [ft]	6.86	0.00	0.00	0.00	0.00	0.00	28.72	28.72	28.72	2.39	2.39	2.39
d_A, Approach Delay [s/veh]	2.97			0.00			11.66			17.80		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	3.88											
Intersection LOS	C											

Intersection Level Of Service Report
#6: University Pkwy / Hallmark Pkwy

Control Type:	Signalized	Delay (sec / veh):	34.8
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.638

Intersection Setup

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Hallmark Pkwy			Hallmark Pkwy		
Base Volume Input [veh/h]	180	464	17	50	467	367	670	22	236	20	23	73
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	464	17	50	467	367	670	22	236	20	23	73
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	122	4	13	123	97	176	6	62	5	6	19
Total Analysis Volume [veh/h]	189	488	18	53	492	386	705	23	248	21	24	77
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Split	Split	Split	Split	Split	Split
Signal Group	3	8	0	7	4	6	0	6	0	0	2	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	7	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	30	0	30	0	0	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	17	28	0	10	21	34	0	34	0	0	18	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	10	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no		no	no	no		no			no	
Maximum Recall	no	no		no	no	no		no			no	
Pedestrian Recall	no	no		no	no	no		no			no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	14	25	25	7	18	31	31	31	31	15	15
g / C, Green / Cycle	0.16	0.28	0.28	0.08	0.20	0.34	0.34	0.34	0.34	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.11	0.14	0.14	0.03	0.15	0.26	0.22	0.22	0.17	0.01	0.06
s, saturation flow rate [veh/h]	1681	1765	1743	1681	3360	1500	1681	1686	1500	1681	1555
c, Capacity [veh/h]	261	490	484	131	672	517	579	581	517	280	259
d1, Uniform Delay [s]	36.15	27.43	27.43	39.52	33.74	26.04	24.69	24.66	23.17	31.65	33.42
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.93	3.89	3.95	9.08	6.92	9.50	5.11	5.06	3.17	0.52	4.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

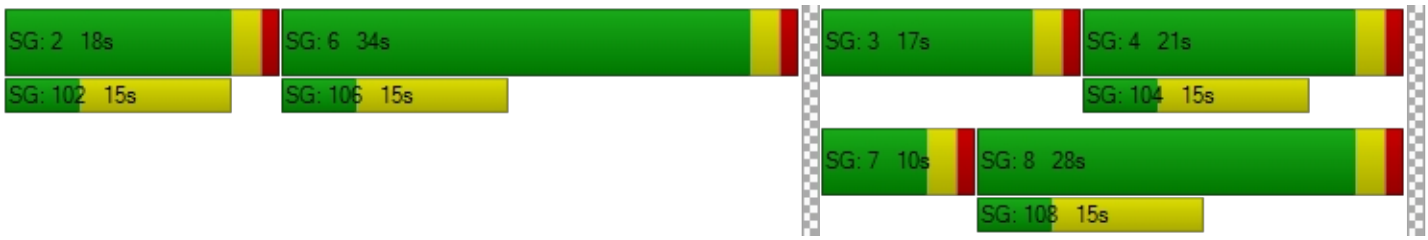
X, volume / capacity	0.72	0.52	0.52	0.41	0.73	0.75	0.63	0.63	0.48	0.07	0.39
d, Delay for Lane Group [s/veh]	52.08	31.32	31.38	48.60	40.66	35.54	29.80	29.72	26.34	32.17	37.78
Lane Group LOS	D	C	C	D	D	D	C	C	C	C	D
Critical Lane Group	yes	no	no	no	yes	yes	no	no	no	no	yes
50th-Percentile Queue Length [veh]	5.04	5.04	4.99	1.43	5.58	8.38	7.10	7.08	4.47	0.42	2.25
50th-Percentile Queue Length [ft]	125.95	126.03	124.78	35.84	139.48	209.56	177.41	177.12	111.70	10.55	56.32
95th-Percentile Queue Length [veh]	8.72	8.72	8.66	2.58	9.45	13.13	11.47	11.45	7.93	0.76	4.06
95th-Percentile Queue Length [ft]	217.98	218.08	216.38	64.52	236.32	328.26	286.63	286.26	198.36	19.00	101.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.08	31.35	31.38	48.60	40.66	35.54	29.76	29.72	26.34	32.17	37.78	37.78
Movement LOS	D	C	C	D	D	D	C	C	C	C	D	D
d_A, Approach Delay [s/veh]	36.99			38.99			28.89			36.82		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	34.76											
Intersection LOS	C											
Intersection V/C	0.638											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#7: University Pkwy / I-215 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	38.9
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.864

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 SB Ramps			I-215 SB Ramps		
Base Volume Input [veh/h]	0	780	404	1095	855	0	112	4	93	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	780	404	1095	855	0	112	4	93	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	205	106	288	225	0	29	1	24	0	0	0
Total Analysis Volume [veh/h]	0	821	425	1153	900	0	118	4	98	0	0	0
Presence of On-Street Parking			no	no			no		no			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	53	0	49	102	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Minimum Recall		no		no	no			no				
Maximum Recall		no		no	no			no				
Pedestrian Recall		no		no	no			no				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	C	C	L	C	C	R	
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	
g_i, Effective Green Time [s]	50	50	46	99	15	15	
g / C, Green / Cycle	0.42	0.42	0.38	0.83	0.13	0.13	
(v / s)_i Volume / Saturation Flow Rate	0.35	0.40	0.35	0.51	0.07	0.07	
s, saturation flow rate [veh/h]	1765	1575	3264	1765	1683	1500	
c, Capacity [veh/h]	735	656	1251	1456	210	187	
d1, Uniform Delay [s]	31.56	33.78	35.28	3.75	49.53	49.15	
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	11.62	24.67	12.49	1.98	11.15	10.04	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

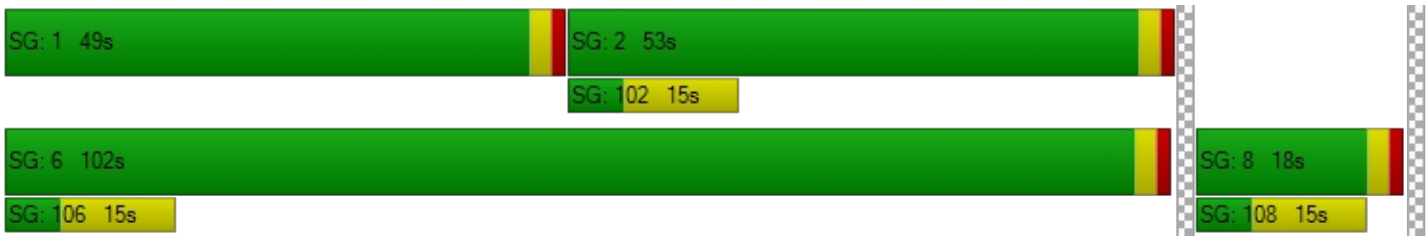
X, volume / capacity	0.85	0.95	0.92	0.62	0.58	0.52	
d, Delay for Lane Group [s/veh]	43.17	58.45	47.76	5.73	60.67	59.19	
Lane Group LOS	D	E	D	A	E	E	
Critical Lane Group	no	yes	yes	no	yes	no	
50th-Percentile Queue Length [veh]	18.32	21.57	17.92	6.22	4.11	3.28	
50th-Percentile Queue Length [ft]	457.99	539.13	448.04	155.43	102.71	81.97	
95th-Percentile Queue Length [veh]	25.34	29.18	24.86	10.31	7.40	5.90	
95th-Percentile Queue Length [ft]	633.48	729.53	621.61	257.66	184.88	147.54	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	46.86	58.45	47.76	5.73	0.00	60.67	60.67	59.19	0.00	0.00	0.00
Movement LOS		D	E	D	A		E	E	E			
d_A, Approach Delay [s/veh]	50.81			29.34			60.01			0.00		
Approach LOS	D			C			E			A		
d_I, Intersection Delay [s/veh]	38.86											
Intersection LOS	D											
Intersection V/C	0.864											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#8: University Pkwy / I-215 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	156.6
Analysis Method:	HCM2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.328

Intersection Setup

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			I-215 NB Ramps			I-215 NB Ramps		
Base Volume Input [veh/h]	146	747	0	0	1445	168	0	0	0	517	32	2166
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	747	0	0	1445	168	0	0	0	517	32	2166
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	197	0	0	380	44	0	0	0	136	8	570
Total Analysis Volume [veh/h]	154	786	0	0	1521	177	0	0	0	544	34	2280
Presence of On-Street Parking	no					no				no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	0	0	0	7	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	13	47	0	0	34	0	0	0	0	0	83	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Minimum Recall	no	no			no						no	
Maximum Recall	no	no			no						no	
Pedestrian Recall	no	no			no						no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	R		C	R
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00		3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00		1.00	1.00
g_i, Effective Green Time [s]	10	44	31	31		80	80
g / C, Green / Cycle	0.08	0.34	0.24	0.24		0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.09	0.23	0.32	0.12		0.34	0.86
s, saturation flow rate [veh/h]	1681	3360	4807	1500		1685	2655
c, Capacity [veh/h]	129	1137	1146	358		1037	1634
d1, Uniform Delay [s]	60.00	37.13	49.50	42.74		14.63	25.00
k, delay calibration	0.50	0.50	0.50	0.50		0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	139.53	3.46	153.22	4.83		2.16	181.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

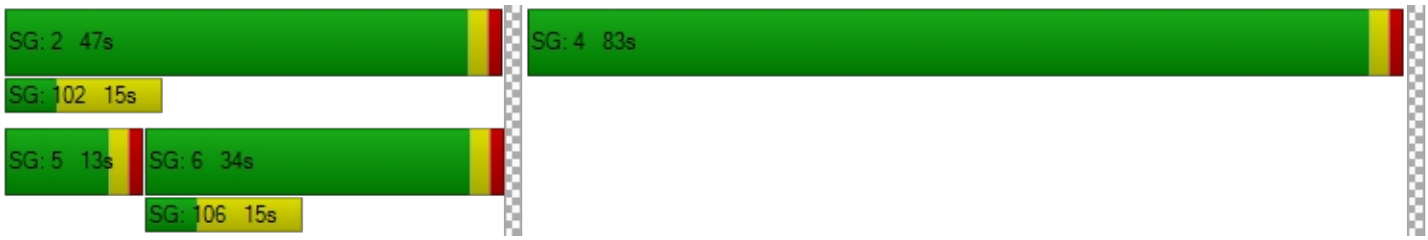
X, volume / capacity	1.19	0.69	1.33	0.49		0.56	1.40
d, Delay for Lane Group [s/veh]	199.53	40.59	202.72	47.57		16.80	206.77
Lane Group LOS	F	D	F	D		B	F
Critical Lane Group	yes	no	yes	no		no	yes
50th-Percentile Queue Length [veh]	9.28	11.32	28.61	5.42		10.30	64.62
50th-Percentile Queue Length [ft]	231.88	283.04	715.32	135.49		257.58	1615.56
95th-Percentile Queue Length [veh]	15.12	16.84	43.17	9.24		15.57	98.14
95th-Percentile Queue Length [ft]	378.10	420.99	1079.16	230.93		389.19	2453.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	199.53	40.59	0.00	0.00	202.72	47.57	0.00	0.00	0.00	16.80	16.80	206.77
Movement LOS	F	D			F	D				B	B	F
d_A, Approach Delay [s/veh]	66.63			186.54			0.00			168.35		
Approach LOS	E			F			A			F		
d_I, Intersection Delay [s/veh]	156.57											
Intersection LOS	F											
Intersection V/C	1.328											

Sequence

Ring 1	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
#9: University Pkwy / Kendall Dr

Control Type:	Signalized	Delay (sec / veh):	36.6
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.758

Intersection Setup

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	University Pkwy			University Pkwy			Kendall Dr			Kendall Dr		
Base Volume Input [veh/h]	326	1127	413	233	1027	119	129	411	83	179	421	114
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	1127	413	233	1027	119	129	411	83	179	421	114
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	297	109	61	270	31	34	108	22	47	111	30
Total Analysis Volume [veh/h]	343	1186	435	245	1081	125	136	433	87	188	443	120
Presence of On-Street Parking	no		no	no		no	no		no	no		no
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	40	0	19	42	0	10	21	0	10	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Minimum Recall	no	no		no	no		no	no		no	no	
Maximum Recall	no	no		no	no		no	no		no	no	
Pedestrian Recall	no	no		no	no		no	no		no	no	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
g_i, Effective Green Time [s]	14	37	37	16	39	39	7	18	18	7	18	18
g / C, Green / Cycle	0.16	0.41	0.41	0.18	0.43	0.43	0.08	0.20	0.20	0.08	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.11	0.33	0.33	0.15	0.24	0.24	0.04	0.15	0.15	0.06	0.17	0.17
s, saturation flow rate [veh/h]	3264	3360	1535	1681	3360	1673	3264	1765	1664	3264	1765	1637
c, Capacity [veh/h]	508	1381	631	299	1456	725	254	353	333	254	353	327
d1, Uniform Delay [s]	35.86	23.27	23.46	35.61	19.00	19.00	39.94	33.93	33.97	40.61	34.50	34.53
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.04	4.98	11.04	21.65	1.52	3.03	7.88	14.02	15.08	17.59	19.40	20.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.68	0.80	0.81	0.82	0.55	0.55	0.54	0.76	0.76	0.74	0.83	0.83
d, Delay for Lane Group [s/veh]	42.90	28.26	34.49	57.27	20.52	22.03	47.82	47.95	49.05	58.20	53.90	55.49
Lane Group LOS	D	C	C	E	C	C	D	D	D	E	D	E
Critical Lane Group	no	no	yes	yes	no	no	no	no	yes	yes	no	no
50th-Percentile Queue Length [veh]	3.99	10.73	11.08	6.87	6.28	6.56	1.71	6.76	6.50	2.63	7.88	7.48
50th-Percentile Queue Length [ft]	99.74	268.24	276.96	171.64	157.02	163.92	42.73	168.90	162.61	65.81	196.99	186.91
95th-Percentile Queue Length [veh]	7.18	16.10	16.54	11.16	10.39	10.76	3.08	11.02	10.69	4.74	12.48	11.96
95th-Percentile Queue Length [ft]	179.53	402.53	413.43	279.07	259.77	268.91	76.92	275.46	267.18	118.45	312.09	299.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.90	28.67	34.49	57.27	20.91	22.03	47.82	48.37	49.05	58.20	54.45	55.49
Movement LOS	D	C	C	E	C	C	D	D	D	E	D	E
d_A, Approach Delay [s/veh]	32.45			27.14			48.35			55.55		
Approach LOS	C			C			D			E		
d_I, Intersection Delay [s/veh]	36.61											
Intersection LOS	D											
Intersection V/C	0.758											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
#10: Georgia Blvd / North Driveway

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	North Driveway		Georgia Blvd		Georgia Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	North Driveway		Georgia Blvd		Georgia Blvd	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	no		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	no		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.52	8.32	7.22	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.42		3.61		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS	A					

Intersection Level Of Service Report
#11: Georgia Blvd / South Driveway

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	South Driveway		Georgia Blvd		Georgia Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	South Driveway		Georgia Blvd		Georgia Blvd	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	no		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	no		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.52	8.32	7.22	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.42		3.61		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS	A					

APPENDIX **D**

OTHER PROJECTS INFORMATION

TOTAL CUMULATIVE PROJECTS TRAFFIC

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Palm Ave/Hallmark Parkway	0	0	0	75	0	0	0	0	0	0	0	45
2	Palm Ave/I-215 SB Ramps	0	27	24	22	66	113	94	39	0	41	24	4
3	Palm Ave/I-215 NB Ramps	33	94	0	0	124	7	0	0	0	76	0	17
4	Palm Ave/Kendall Dr_Little League Dr	0	50	61	43	62	0	0	0	0	69	0	35
5	Hallmark Pkwy/Saratoga Ave	13	147	0	0	49	0	0	0	8	0	0	0
6	University Pkwy/Hallmark Pkwy	36	17	0	0	17	131	52	0	15	0	0	0
7	University Pkwy/I-215 SB Ramps	0	32	33	45	142	0	1	0	2	0	0	0
8	University Pkwy/I-215 NB Ramps	0	31	0	0	98	1	0	0	0	87	0	45
9	University Pkwy/Kendall Dr	43	19	48	0	28	17	19	62	47	66	60	0

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Palm Ave/Hallmark Parkway	0	0	0	37	0	0	0	0	0	0	0	66
2	Palm Ave/I-215 SB Ramps	0	64	50	48	34	63	52	22	0	19	14	13
3	Palm Ave/I-215 NB Ramps	52	78	0	0	103	13	0	0	0	39	0	52
4	Palm Ave/Kendall Dr_Little League Dr	0	87	43	76	80	0	0	0	0	35	0	82
5	Hallmark Pkwy/Saratoga Ave	10	61	0	0	145	0	0	0	10	0	0	0
6	University Pkwy/Hallmark Pkwy	18	18	0	0	17	60	127	0	35	0	0	0
7	University Pkwy/I-215 SB Ramps	0	57	84	28	71	0	1	0	3	0	0	0
8	University Pkwy/I-215 NB Ramps	1	55	0	0	59	2	0	0	0	38	0	27
9	University Pkwy/Kendall Dr	31	23	43	0	24	23	21	76	30	30	79	0

Enter only in blue cells	Yellow cells calculate

Int. #:	1	Palm Ave/Hallmark Parkway

Mirror distribution? Y Entire Intersection

Mirror distribution?

TOTAL CUMULATIVE PROJECTS TRAFFIC													
Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	0	0	51	0	0	0	0	0	0	0	24
AM Out		0	0	0	24	0	0	0	0	0	0	0	21
AM Tot		0	0	0	75	0	0	0	0	0	0	0	45
PM In		0	0	0	24	0	0	0	0	0	0	0	14
PM Out		0	0	0	13	0	0	0	0	0	0	0	52
PM Tot		0	0	0	37	0	0	0	0	0	0	0	66

Zone #	1	Palm Avenue and Industrial Parkway (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				75%								
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	75%
AM Out												
PM In	0%	0%	0%	75%	0%	0%	0%	0%	0%		0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	75%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	18	0	0	0	14	0	0	0	0	0	0	0	0
AM Out	10	0	0	0	0	0	0	0	0	0	0	0	8
PM In	10	0	0	0	8	0	0	0	0	0	0	0	0
PM Out	21	0	0	0	0	0	0	0	0	0	0	0	16

Zone #	2	2586 Shenandoah Way

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	3	3909 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	22	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	22	0	0	0	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	19	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	4	4680 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				15%								
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%
AM Out												
PM In	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	42	0	0	0	6	0	0	0	0	0	0	0	0
AM Out	26	0	0	0	0	0	0	0	0	0	0	0	4
PM In	32	0	0	0	5	0	0	0	0	0	0	0	0
PM Out	34	0	0	0	0	0	0	0	0	0	0	0	5

Int. #:	1	Palm Ave/Hallmark Parkway

Zone #	5	Kendall Drive and Palm Avenue

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												15%
Y	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%
PM Out	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	162	0	0	0	0	0	0	0	0	0	0	0	24
AM Out	157	0	0	0	24	0	0	0	0	0	0	0	0
PM In	90	0	0	0	0	0	0	0	0	0	0	0	14
PM Out	86	0	0	0	13	0	0	0	0	0	0	0	0

Zone #	6	2424 Kendall Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	29	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	26	0	0	0	0	0	0	0	0	0	0	0	0
PM In	26	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	29	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	7	University Parkway and State Street

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	185	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	177	0	0	0	0	0	0	0	0	0	0	0	0
PM In	77	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	77	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	8	Kendall Drive and Campus Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	8	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	4	0	0	0	0	0	0	0	0	0	0	0	0
PM In	8	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	8	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Olive Avenue and Verdemont Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	1	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	3	0	0	0	0	0	0	0	0	0	0	0	0
PM In	4	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	2	0	0	0	0	0	0	0	0	0	0	0	0

Int. #:	1	Palm Ave/Hallmark Parkway

Zone #	10	2705 W. Lexington Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				15%								
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%
AM Out												
PM In	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	30	0	0	0	5	0	0	0	0	0	0	0	0
AM Out	8	0	0	0	0	0	0	0	0	0	0	0	1
PM In	10	0	0	0	2	0	0	0	0	0	0	0	0
PM Out	30	0	0	0	0	0	0	0	0	0	0	0	5

Zone #	11	Hallmark Parkway and Shenandoah Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				15%								
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%
AM Out												
PM In	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	65	0	0	0	10	0	0	0	0	0	0	0	0
AM Out	17	0	0	0	0	0	0	0	0	0	0	0	3
PM In	22	0	0	0	3	0	0	0	0	0	0	0	0
PM Out	66	0	0	0	0	0	0	0	0	0	0	0	10

Zone #	12	Little League Drive and Palm Avenue

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	83	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	110	0	0	0	0	0	0	0	0	0	0	0	0
PM In	258	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	238	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	13	Shopping (SOUTH)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	131	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	116	0	0	0	0	0	0	0	0	0	0	0	0
PM In	186	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	188	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	14	Palm Avenue and Industrial Parkway (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	56	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	30	0	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	63	0	0	0	0	0	0	0	0	0	0	0	0

Int. #:	1	Palm Ave/Hallmark Parkway

Zone #	15	2705 W. Lexington Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				30%								
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%
AM Out												
PM In	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	17	0	0	0	5	0	0	0	0	0	0	0	0
AM Out	5	0	0	0	0	0	0	0	0	0	0	0	2
PM In	6	0	0	0	2	0	0	0	0	0	0	0	0
PM Out	17	0	0	0	0	0	0	0	0	0	0	0	5

Zone #	16	Hallmark Parkway and Shenandoah Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				30%								
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%
AM Out												
PM In	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	37	0	0	0	11	0	0	0	0	0	0	0	0
AM Out	10	0	0	0	0	0	0	0	0	0	0	0	3
PM In	12	0	0	0	4	0	0	0	0	0	0	0	0
PM Out	38	0	0	0	0	0	0	0	0	0	0	0	11

Zone #	17	Renaissance SP (Marketplace)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	121	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	86	0	0	0	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	201	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	18	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	19	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	20	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0

	Int. #:	1	Palm Ave/Hallmark Parkway									
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Enter only in blue cells	Yellow cells calculate

Int. #:	2	Palm Ave/I-215 SB Ramps

N

TOTAL CUMULATIVE PROJECTS TRAFFIC													
Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	0	0	0	66	113	0	0	0	41	24	4
AM Out		0	27	24	22	0	0	94	39	0	0	0	0
AM Tot		0	27	24	22	66	113	94	39	0	41	24	4
PM In		0	0	0	0	34	63	0	0	0	19	14	13
PM Out		0	64	50	48	0	0	52	22	0	0	0	0
PM Tot		0	64	50	48	34	63	52	22	0	19	14	13

Zone #	1	Palm Avenue and Industrial Parkway (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					70%					5%		
N	0%	45%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		45%	30%									
PM In	0%	0%	0%	0%	70%	0%	0%	0%	0%		0%	0%
PM Out	0%	45%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	18	0	0	0	0	13	0	0	0	0	1	0	0
AM Out	10	0	5	3	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	7	0	0	0	0	0	0	0
PM Out	21	0	9	6	0	0	0	0	0	0	0	0	0

Zone #	2	2586 Shenandoah Way

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	3	3909 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	22	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	22	0	0	0	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	19	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	4	4680 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					10%					5%		
N	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		15%										
PM In	0%	0%	0%	0%	10%	0%	0%	0%	0%	5%	0%	0%
PM Out	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	42	0	0	0	0	4	0	0	0	0	2	0	0
AM Out	26	0	4	0	0	0	0	0	0	0	0	0	0
PM In	32	0	0	0	0	3	0	0	0	0	2	0	0
PM Out	34	0	5	0	0	0	0	0	0	0	0	0	0

Zone #	5	Kendall Drive and Palm Avenue

Int. #:	2	Palm Ave/I-215 SB Ramps

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In						70%					15%	
N	0%	0%	0%	0%	0%	0%	60%	25%	0%	0%	0%	0%
AM Out							60%	25%				
PM In	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	15%	0%
PM Out	0%	0%	0%	0%	0%	0%	60%	25%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	162	0	0	0	0	0	113	0	0	0	0	24	0
AM Out	157	0	0	0	0	0	0	94	39	0	0	0	0
PM In	90	0	0	0	0	0	63	0	0	0	0	14	0
PM Out	86	0	0	0	0	0	0	52	22	0	0	0	0

Zone #	6	2424 Kendall Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	29	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	26	0	0	0	0	0	0	0	0	0	0	0	0
PM In	26	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	29	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	7	University Parkway and State Street

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	185	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	177	0	0	0	0	0	0	0	0	0	0	0	0
PM In	77	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	77	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	8	Kendall Drive and Campus Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	8	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	4	0	0	0	0	0	0	0	0	0	0	0	0
PM In	8	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	8	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Olive Avenue and Verdemont Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	1	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	3	0	0	0	0	0	0	0	0	0	0	0	0
PM In	4	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	2	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	2705 W. Lexington Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					10%					5%		
N	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	30	0	0	0	0	3	0	0	0	0	2	0	0

	Int. #:	2	Palm Ave/I-215 SB Ramps									
AM Out		15%										
PM In	0%	0%	0%	0%	10%	0%	0%	0%	0%	5%	0%	0%
PM Out	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

AM Out	8	0	1	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	1	0	0	0	0	1	0	0
PM Out	30	0	5	0	0	0	0	0	0	0	0	0	0

Zone #	11	Hallmark Parkway and Shenandoah Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					10%					5%		
N	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		15%										
PM In	0%	0%	0%	0%	10%	0%	0%	0%	0%	5%	0%	0%
PM Out	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	65	0	0	0	0	7	0	0	0	0	3	0	0
AM Out	17	0	3	0	0	0	0	0	0	0	0	0	0
PM In	22	0	0	0	0	2	0	0	0	0	1	0	0
PM Out	66	0	10	0	0	0	0	0	0	0	0	0	0

Zone #	12	Little League Drive and Palm Avenue

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												5%
N	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out				20%								
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%
PM Out	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	83	0	0	0	0	0	0	0	0	0	0	0	4
AM Out	110	0	0	0	22	0	0	0	0	0	0	0	0
PM In	258	0	0	0	0	0	0	0	0	0	0	0	13
PM Out	238	0	0	0	48	0	0	0	0	0	0	0	0

Zone #	13	Shopping (SOUTH)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	131	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	116	0	0	0	0	0	0	0	0	0	0	0	0
PM In	186	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	188	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	14	Palm Avenue and Industrial Parkway (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					70%					30%		
N	0%	30%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		30%	70%									
PM In	0%	0%	0%	0%	70%	0%	0%	0%	0%	30%	0%	0%
PM Out	0%	30%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	56	0	0	0	0	39	0	0	0	0	17	0	0
AM Out	30	0	9	21	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	21	0	0	0	0	9	0	0
PM Out	63	0	19	44	0	0	0	0	0	0	0	0	0

Zone #	15	2705 W. Lexington Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										30%		
N	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		30%										
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	0%
PM Out	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	17	0	0	0	0	0	0	0	0	0	5	0	0
AM Out	5	0	2	0	0	0	0	0	0	0	0	0	0
PM In	6	0	0	0	0	0	0	0	0	0	2	0	0
PM Out	17	0	5	0	0	0	0	0	0	0	0	0	0

Int. #:	2	Palm Ave/I-215 SB Ramps

Zone #	16	Hallmark Parkway and Shenandoah Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										30%		
N	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		30%										
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	0%
PM Out	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	37	0	0	0	0	0	0	0	0	0	11	0	0
AM Out	10	0	3	0	0	0	0	0	0	0	0	0	0
PM In	12	0	0	0	0	0	0	0	0	0	4	0	0
PM Out	38	0	11	0	0	0	0	0	0	0	0	0	0

Zone #	17	Renaissance SP (Marketplace)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	121	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	86	0	0	0	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	201	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	18	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	19	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	20	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Int. #:	3	Palm Ave/I-215 NB Ramps

N

TOTAL CUMULATIVE PROJECTS TRAFFIC

Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	5	0	0	102	0	0	0	0	76	0	17
AM Out		33	89	0	0	22	7	0	0	0	0	0	0
AM Tot		33	94	0	0	124	7	0	0	0	76	0	17
PM In		0	14	0	0	55	0	0	0	0	39	0	52
PM Out		52	64	0	0	48	13	0	0	0	0	0	0
PM Tot		52	78	0	0	103	13	0	0	0	39	0	52

Zone #	1	Palm Avenue and Industrial Parkway (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					40%					30%		
N	5%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	5%	40%										
PM In	0%	0%	0%	0%	40%	0%	0%	0%	0%		0%	0%
PM Out	5%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	18	0	0	0	0	7	0	0	0	0	5	0	0
AM Out	10	1	4	0	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	4	0	0	0	0	0	0	0
PM Out	21	1	8	0	0	0	0	0	0	0	0	0	0

Zone #	2	2586 Shenandoah Way

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												20%
N	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%
AM Out					20%							
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%
PM Out	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	3	3909 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	22	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	22	0	0	0	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	19	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	4	4680 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					10%							
N	5%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	5%	10%										
PM In	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%
PM Out	5%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	42	0	0	0	0	4	0	0	0	0	0	0	0
AM Out	26	1	3	0	0	0	0	0	0	0	0	0	0
PM In	32	0	0	0	0	3	0	0	0	0	0	0	0
PM Out	34	2	3	0	0	0	0	0	0	0	0	0	0

Zone #	5	Kendall Drive and Palm Avenue

Int. #:	3	Palm Ave/I-215 NB Ramps

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					50%					20%		
N	10%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	10%	50%										
PM In	0%	0%	0%	0%	50%	0%	0%	0%	0%	20%	0%	0%
PM Out	10%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	162	0	0	0	0	81	0	0	0	0	32	0	0
AM Out	157	16	79	0	0	0	0	0	0	0	0	0	0
PM In	90	0	0	0	0	45	0	0	0	0	18	0	0
PM Out	86	9	43	0	0	0	0	0	0	0	0	0	0

Zone #	6	2424 Kendall Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		5%										
N	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%
AM Out						5%						
PM In	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	29	0	1	0	0	0	0	0	0	0	0	0	0
AM Out	26	0	0	0	0	0	1	0	0	0	0	0	0
PM In	26	0	1	0	0	0	0	0	0	0	0	0	0
PM Out	29	0	0	0	0	0	1	0	0	0	0	0	0

Zone #	7	University Parkway and State Street

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	185	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	177	0	0	0	0	0	0	0	0	0	0	0	0
PM In	77	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	77	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	8	Kendall Drive and Campus Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	8	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	4	0	0	0	0	0	0	0	0	0	0	0	0
PM In	8	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	8	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Olive Avenue and Verdemont Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	1	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	3	0	0	0	0	0	0	0	0	0	0	0	0
PM In	4	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	2	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	2705 W. Lexington Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					10%							
N	5%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	5%	10%										

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	30	0	0	0	0	3	0	0	0	0	0	0	0
AM Out	8	0	1	0	0	0	0	0	0	0	0	0	0

	Int. #:	3	Palm Ave/I-215 NB Ramps										
PM In	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	5%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

PM In	10	0	0	0	0	1	0	0	0	0	0	0	0
PM Out	30	2	3	0	0	0	0	0	0	0	0	0	0

Zone #	11	Hallmark Parkway and Shenandoah Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					10%							
N	5%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	5%	10%										
PM In	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%
PM Out	5%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	65	0	0	0	0	7	0	0	0	0	0	0	0
AM Out	17	1	2	0	0	0	0	0	0	0	0	0	0
PM In	22	0	0	0	0	2	0	0	0	0	0	0	0
PM Out	66	3	7	0	0	0	0	0	0	0	0	0	0

Zone #	12	Little League Drive and Palm Avenue

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		5%										20%
N	0%	0%	0%	0%	20%	5%	0%	0%	0%	0%	0%	0%
AM Out					20%	5%						
PM In	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%
PM Out	0%	0%	0%	0%	20%	5%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	83	0	4	0	0	0	0	0	0	0	0	0	17
AM Out	110	0	0	0	0	22	6	0	0	0	0	0	0
PM In	258	0	13	0	0	0	0	0	0	0	0	0	52
PM Out	238	0	0	0	0	48	12	0	0	0	0	0	0

Zone #	13	Shopping (SOUTH)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	131	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	116	0	0	0	0	0	0	0	0	0	0	0	0
PM In	186	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	188	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	14	Palm Avenue and Industrial Parkway (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										70%		
N	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	30%											
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	70%	0%	0%
PM Out	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	56	0	0	0	0	0	0	0	0	0	39	0	0
AM Out	30	9	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	21	0	0
PM Out	63	19	0	0	0	0	0	0	0	0	0	0	0

Zone #	15	2705 W. Lexington Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	30%											
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	17	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	5	2	0	0	0	0	0	0	0	0	0	0	0
PM In	6	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	17	5	0	0	0	0	0	0	0	0	0	0	0

Zone #	16	Hallmark Parkway and Shenandoah Way (TRUCKS)

Int. #:	3	Palm Ave/I-215 NB Ramps

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out	30%											
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	37	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	10	3	0	0	0	0	0	0	0	0	0	0	0
PM In	12	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	38	11	0	0	0	0	0	0	0	0	0	0	0

Zone #	17	Renaissance SP (Marketplace)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	121	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	86	0	0	0	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	201	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	18	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	19	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	20	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Enter only in blue cells	Yellow cells calculate

Int. #:	4	Palm Ave/Kendall Dr_Little League Dr

Y

TOTAL CUMULATIVE PROJECTS TRAFFIC													
Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	21	1	10	34	0	0	0	0	68	0	25
AM Out		0	29	60	33	28	0	0	0	0	1	0	10
AM Tot		0	50	61	43	62	0	0	0	0	69	0	35
PM In		0	65	1	5	20	0	0	0	0	34	0	77
PM Out		0	22	42	71	60	0	0	0	0	1	0	5
PM Tot		0	87	43	76	80	0	0	0	0	35	0	82

Zone #	1	Palm Avenue and Industrial Parkway (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%					35%		
Y	0%	5%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	5%	0%	0%	0%	0%		0%	0%
PM Out	0%	5%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	18	0	0	0	0	1	0	0	0	0	6	0	0
AM Out	10	0	1	4	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	1	0	0	0	0	0	0	0
PM Out	21	0	1	7	0	0	0	0	0	0	0	0	0

Zone #	2	2586 Shenandoah Way

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	3	3909 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	22	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	22	0	0	0	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	19	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	4	4680 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					10%							
Y	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	42	0	0	0	0	4	0	0	0	0	0	0	0
AM Out	26	0	3	0	0	0	0	0	0	0	0	0	0
PM In	32	0	0	0	0	3	0	0	0	0	0	0	0
PM Out	34	0	3	0	0	0	0	0	0	0	0	0	0

Zone #	5	Kendall Drive and Palm Avenue

Int. #:	4	Palm Ave/Kendall Dr_Little League Dr

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					15%					35%		
Y	0%	15%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	15%	0%	0%	0%	0%	35%	0%	0%
PM Out	0%	15%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	162	0	0	0	0	24	0	0	0	0	57	0	0
AM Out	157	0	24	55	0	0	0	0	0	0	0	0	0
PM In	90	0	0	0	0	14	0	0	0	0	32	0	0
PM Out	86	0	13	30	0	0	0	0	0	0	0	0	0

Zone #	6	2424 Kendall Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			5%	5%								
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	5%
AM Out												
PM In	0%	0%	5%	5%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	5%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	29	0	0	1	1	0	0	0	0	0	0	0	0
AM Out	26	0	0	0	0	0	0	0	0	0	1	0	1
PM In	26	0	0	1	1	0	0	0	0	0	0	0	0
PM Out	29	0	0	0	0	0	0	0	0	0	1	0	1

Zone #	7	University Parkway and State Street

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				5%								
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%
AM Out												
PM In	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	185	0	0	0	9	0	0	0	0	0	0	0	0
AM Out	177	0	0	0	0	0	0	0	0	0	0	0	9
PM In	77	0	0	0	4	0	0	0	0	0	0	0	0
PM Out	77	0	0	0	0	0	0	0	0	0	0	0	4

Zone #	8	Kendall Drive and Campus Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	8	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	4	0	0	0	0	0	0	0	0	0	0	0	0
PM In	8	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	8	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Olive Avenue and Verdemont Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	1	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	3	0	0	0	0	0	0	0	0	0	0	0	0
PM In	4	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	2	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	2705 W. Lexington Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%					5%		
Y	0%	5%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	30	0	0	0	0	2	0	0	0	0	2	0	0

Int. #:	4	Palm Ave/Kendall Dr_Little League Dr										
AM Out												
PM In	0%	0%	0%	0%	5%	0%	0%	0%	0%	5%	0%	0%
PM Out	0%	5%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%

AM Out	8	0	0	0	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	1	0	0	0	0	1	0	0
PM Out	30	0	2	2	0	0	0	0	0	0	0	0	0

Zone #	11	Hallmark Parkway and Shenandoah Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%					5%		
Y	0%	5%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	5%	0%	0%	0%	0%	5%	0%	0%
PM Out	0%	5%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	65	0	0	0	0	3	0	0	0	0	3	0	0
AM Out	17	0	1	1	0	0	0	0	0	0	0	0	0
PM In	22	0	0	0	0	1	0	0	0	0	1	0	0
PM Out	66	0	3	3	0	0	0	0	0	0	0	0	0

Zone #	12	Little League Drive and Palm Avenue

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		25%										30%
Y	0%	0%	0%	30%	25%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%
PM Out	0%	0%	0%	30%	25%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	83	0	21	0	0	0	0	0	0	0	0	0	25
AM Out	110	0	0	0	33	28	0	0	0	0	0	0	0
PM In	258	0	65	0	0	0	0	0	0	0	0	0	77
PM Out	238	0	0	0	71	60	0	0	0	0	0	0	0

Zone #	13	Shopping (SOUTH)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	131	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	116	0	0	0	0	0	0	0	0	0	0	0	0
PM In	186	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	188	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	14	Palm Avenue and Industrial Parkway (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	56	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	30	0	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	63	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	15	2705 W. Lexington Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	17	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	5	0	0	0	0	0	0	0	0	0	0	0	0
PM In	6	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	17	0	0	0	0	0	0	0	0	0	0	0	0

Int. #:	4	Palm Ave/Kendall Dr_Little League Dr
Zone #	16	Hallmark Parkway and Shenandoah Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	37	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	10	0	0	0	0	0	0	0	0	0	0	0	0
PM In	12	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	38	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	17	Renaissance SP (Marketplace)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	121	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	86	0	0	0	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	201	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	18	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	19	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	20	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Enter only in blue cells	Yellow cells calculate

Int. #:	5	Hallmark Pkwy/Saratoga Ave

Y

TOTAL CUMULATIVE PROJECTS TRAFFIC													
Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		13	147	0	0	0	0	0	0	0	0	0	0
AM Out		0	0	0	0	49	0	0	0	8	0	0	0
AM Tot		13	147	0	0	49	0	0	0	8	0	0	0
PM In		10	61	0	0	0	0	0	0	0	0	0	0
PM Out		0	0	0	0	145	0	0	0	10	0	0	0
PM Tot		10	61	0	0	145	0	0	0	10	0	0	0

Zone #	1	Palm Avenue and Industrial Parkway (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		25%										
Y	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	25%	0%	0%	0%	0%	0%	0%	0%		0%	0%
PM Out	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	18	0	5	0	0	0	0	0	0	0	0	0	0
AM Out	10	0	0	0	0	3	0	0	0	0	0	0	0
PM In	10	0	3	0	0	0	0	0	0	0	0	0	0
PM Out	21	0	0	0	0	5	0	0	0	0	0	0	0

Zone #	2	2586 Shenandoah Way

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	3	3909 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	22	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	22	0	0	0	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	19	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	4	4680 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	30%	55%										
Y	0%	0%	0%	0%	55%	0%	0%	0%	30%	0%	0%	0%
AM Out												
PM In	30%	55%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	55%	0%	0%	0%	30%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	42	13	23	0	0	0	0	0	0	0	0	0	0
AM Out	26	0	0	0	0	14	0	0	0	8	0	0	0
PM In	32	10	18	0	0	0	0	0	0	0	0	0	0
PM Out	34	0	0	0	0	19	0	0	0	10	0	0	0

Zone #	5	Kendall Drive and Palm Avenue

Int. #:	5	Hallmark Pkwy/Saratoga Ave

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	162	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	157	0	0	0	0	0	0	0	0	0	0	0	0
PM In	90	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	86	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	6	2424 Kendall Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	29	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	26	0	0	0	0	0	0	0	0	0	0	0	0
PM In	26	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	29	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	7	University Parkway and State Street

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	185	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	177	0	0	0	0	0	0	0	0	0	0	0	0
PM In	77	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	77	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	8	Kendall Drive and Campus Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	8	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	4	0	0	0	0	0	0	0	0	0	0	0	0
PM In	8	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	8	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Olive Avenue and Verdemont Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	1	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	3	0	0	0	0	0	0	0	0	0	0	0	0
PM In	4	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	2	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	2705 W. Lexington Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		85%										
Y	0%	0%	0%	0%	85%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	30	0	26	0	0	0	0	0	0	0	0	0	0

	Int. #:	5	Hallmark Pkwy/Saratoga Ave									
AM Out												
PM In	0%	85%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	85%	0%	0%	0%	0%	0%	0%	0%

AM Out	8	0	0	0	0	7	0	0	0	0	0	0	0
PM In	10	0	9	0	0	0	0	0	0	0	0	0	0
PM Out	30	0	0	0	0	26	0	0	0	0	0	0	0

Zone #	11	Hallmark Parkway and Shenandoah Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		85%										
Y	0%	0%	0%	0%	85%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	85%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	85%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	65	0	55	0	0	0	0	0	0	0	0	0	0
AM Out	17	0	0	0	0	14	0	0	0	0	0	0	0
PM In	22	0	19	0	0	0	0	0	0	0	0	0	0
PM Out	66	0	0	0	0	56	0	0	0	0	0	0	0

Zone #	12	Little League Drive and Palm Avenue

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	83	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	110	0	0	0	0	0	0	0	0	0	0	0	0
PM In	258	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	238	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	13	Shopping (SOUTH)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	131	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	116	0	0	0	0	0	0	0	0	0	0	0	0
PM In	186	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	188	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	14	Palm Avenue and Industrial Parkway (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	56	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	30	0	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	63	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	15	2705 W. Lexington Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		70%										
Y	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	17	0	12	0	0	0	0	0	0	0	0	0	0
AM Out	5	0	0	0	0	4	0	0	0	0	0	0	0
PM In	6	0	4	0	0	0	0	0	0	0	0	0	0
PM Out	17	0	0	0	0	12	0	0	0	0	0	0	0

Int. #:	5	Hallmark Pkwy/Saratoga Ave

Zone #	16	Hallmark Parkway and Shenandoah Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		70%										
Y	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	37	0	26	0	0	0	0	0	0	0	0	0	0
AM Out	10	0	0	0	0	7	0	0	0	0	0	0	0
PM In	12	0	8	0	0	0	0	0	0	0	0	0	0
PM Out	38	0	0	0	0	27	0	0	0	0	0	0	0

Zone #	17	Renaissance SP (Marketplace)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	121	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	86	0	0	0	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	201	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	18	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	19	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	20	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Enter only in blue cells	Yellow cells calculate

Int. #:	6	University Pkwy/Hallmark Pkwy

Y

TOTAL CUMULATIVE PROJECTS TRAFFIC													
Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		36	7	0	0	10	131	0	0	0	0	0	0
AM Out		0	10	0	0	7	0	52	0	15	0	0	0
AM Tot		36	17	0	0	17	131	52	0	15	0	0	0
PM In		18	7	0	0	10	60	0	0	0	0	0	0
PM Out		0	10	0	0	7	0	127	0	35	0	0	0
PM Tot		18	17	0	0	17	60	127	0	35	0	0	0

Zone #	1	Palm Avenue and Industrial Parkway (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	25%											
Y	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%
AM Out												
PM In	25%	0%	0%	0%	0%	0%	0%	0%	0%		0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	18	5	0	0	0	0	0	0	0	0	0	0	0
AM Out	10	0	0	0	0	0	0	0	0	3	0	0	0
PM In	10	3	0	0	0	0	0	0	0	0	0	0	0
PM Out	21	0	0	0	0	0	0	0	0	5	0	0	0

Zone #	2	2586 Shenandoah Way

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	3	3909 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	10%				40%	40%						
Y	0%	40%	0%	0%	0%	0%	40%	0%	10%	0%	0%	0%
AM Out												
PM In	10%	0%	0%	0%	40%	40%	0%	0%	0%	0%	0%	0%
PM Out	0%	40%	0%	0%	0%	0%	40%	0%	10%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	22	2	0	0	0	9	9	0	0	0	0	0	0
AM Out	22	0	9	0	0	0	0	9	0	2	0	0	0
PM In	19	2	0	0	0	8	8	0	0	0	0	0	0
PM Out	19	0	8	0	0	0	0	8	0	2	0	0	0

Zone #	4	4680 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	20%					65%						
Y	0%	0%	0%	0%	0%	0%	65%	0%	20%	0%	0%	0%
AM Out												
PM In	20%	0%	0%	0%	0%	65%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	65%	0%	20%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	42	8	0	0	0	0	27	0	0	0	0	0	0
AM Out	26	0	0	0	0	0	0	17	0	5	0	0	0
PM In	32	6	0	0	0	0	21	0	0	0	0	0	0
PM Out	34	0	0	0	0	0	0	22	0	7	0	0	0

Zone #	5	Kendall Drive and Palm Avenue

Int. #:	6	University Pkwy/Hallmark Pkwy

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	162	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	157	0	0	0	0	0	0	0	0	0	0	0	0
PM In	90	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	86	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	6	2424 Kendall Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		25%										
Y	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	29	0	7	0	0	0	0	0	0	0	0	0	0
AM Out	26	0	0	0	0	7	0	0	0	0	0	0	0
PM In	26	0	7	0	0	0	0	0	0	0	0	0	0
PM Out	29	0	0	0	0	7	0	0	0	0	0	0	0

Zone #	7	University Parkway and State Street

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	185	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	177	0	0	0	0	0	0	0	0	0	0	0	0
PM In	77	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	77	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	8	Kendall Drive and Campus Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	8	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	4	0	0	0	0	0	0	0	0	0	0	0	0
PM In	8	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	8	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Olive Avenue and Verdemont Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	1	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	3	0	0	0	0	0	0	0	0	0	0	0	0
PM In	4	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	2	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	2705 W. Lexington Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	25%					60%						
Y	0%	0%	0%	0%	0%	0%	60%	0%	25%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	30	8	0	0	0	0	18	0	0	0	0	0	0

Int. #:	6	University Pkwy/Hallmark Pkwy										
AM Out												
PM In	25%	0%	0%	0%	0%	60%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	60%	0%	25%	0%	0%	0%

AM Out	8	0	0	0	0	0	0	5	0	2	0	0	0
PM In	10	3	0	0	0	0	6	0	0	0	0	0	0
PM Out	30	0	0	0	0	0	0	18	0	8	0	0	0

Zone #	11	Hallmark Parkway and Shenandoah Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	20%					60%						
Y	0%	0%	0%	0%	0%	0%	60%	0%	20%	0%	0%	0%
AM Out												
PM In	20%	0%	0%	0%	0%	60%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	60%	0%	20%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	65	13	0	0	0	0	39	0	0	0	0	0	0
AM Out	17	0	0	0	0	0	0	10	0	3	0	0	0
PM In	22	4	0	0	0	0	13	0	0	0	0	0	0
PM Out	66	0	0	0	0	0	0	40	0	13	0	0	0

Zone #	12	Little League Drive and Palm Avenue

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	83	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	110	0	0	0	0	0	0	0	0	0	0	0	0
PM In	258	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	238	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	13	Shopping (SOUTH)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	131	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	116	0	0	0	0	0	0	0	0	0	0	0	0
PM In	186	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	188	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	14	Palm Avenue and Industrial Parkway (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	56	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	30	0	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	63	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	15	2705 W. Lexington Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In						70%						
Y	0%	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	17	0	0	0	0	0	12	0	0	0	0	0	0
AM Out	5	0	0	0	0	0	0	4	0	0	0	0	0
PM In	6	0	0	0	0	0	4	0	0	0	0	0	0
PM Out	17	0	0	0	0	0	0	12	0	0	0	0	0

Int. #:	6	University Pkwy/Hallmark Pkwy

Zone #	16	Hallmark Parkway and Shenandoah Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In						70%						
Y	0%	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	37	0	0	0	0	0	26	0	0	0	0	0	0
AM Out	10	0	0	0	0	0	0	7	0	0	0	0	0
PM In	12	0	0	0	0	0	8	0	0	0	0	0	0
PM Out	38	0	0	0	0	0	0	27	0	0	0	0	0

Zone #	17	Renaissance SP (Marketplace)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					1%							
Y	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	121	0	0	0	0	1	0	0	0	0	0	0	0
AM Out	86	0	1	0	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	0	2	0	0	0	0	0	0	0
PM Out	201	0	2	0	0	0	0	0	0	0	0	0	0

Zone #	18	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	19	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	20	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Enter only in blue cells	Yellow cells calculate

Int. #:	7	University Pkwy/I-215 SB Ramps

N

TOTAL CUMULATIVE PROJECTS TRAFFIC													
Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	7	0	5	135	0	0	0	2	0	0	0
AM Out		0	25	33	39	7	0	0	0	0	0	0	0
AM Tot		0	32	33	44	142	0	0	0	2	0	0	0
PM In		0	7	0	7	64	0	0	0	2	0	0	0
PM Out		0	49	84	19	7	0	0	0	0	0	0	0
PM Tot		0	56	84	26	71	0	0	0	2	0	0	0

Zone #	1	Palm Avenue and Industrial Parkway (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	18	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	10	0	0	0	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	21	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	2	2586 Shenandoah Way

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	3	3909 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					60%				10%			
N	0%	40%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		40%	30%									
PM In	0%	0%	0%	0%	60%	0%	0%	0%	10%	0%	0%	0%
PM Out	0%	40%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	22	0	0	0	0	13	0	0	0	2	0	0	0
AM Out	22	0	9	7	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	11	0	0	0	2	0	0	0
PM Out	19	0	8	6	0	0	0	0	0	0	0	0	0

Zone #	4	4680 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					60%							
N	0%	30%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		30%	30%									
PM In	0%	0%	0%	0%	60%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	30%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	42	0	0	0	0	25	0	0	0	0	0	0	0
AM Out	26	0	8	8	0	0	0	0	0	0	0	0	0
PM In	32	0	0	0	0	19	0	0	0	0	0	0	0
PM Out	34	0	10	10	0	0	0	0	0	0	0	0	0

Zone #	5	Kendall Drive and Palm Avenue

Int. #:	7	University Pkwy/I-215 SB Ramps

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	162	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	157	0	0	0	0	0	0	0	0	0	0	0	0
PM In	90	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	86	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	6	2424 Kendall Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		25%										
N	0%	0%	0%	15%	25%	0%	0%	0%	0%	0%	0%	0%
AM Out				15%	25%							
PM In	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	15%	25%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	29	0	7	0	0	0	0	0	0	0	0	0	0
AM Out	26	0	0	0	4	7	0	0	0	0	0	0	0
PM In	26	0	7	0	0	0	0	0	0	0	0	0	0
PM Out	29	0	0	0	4	7	0	0	0	0	0	0	0

Zone #	7	University Parkway and State Street

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out				20%								
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	185	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	177	0	0	0	35	0	0	0	0	0	0	0	0
PM In	77	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	77	0	0	0	15	0	0	0	0	0	0	0	0

Zone #	8	Kendall Drive and Campus Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	8	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	4	0	0	0	0	0	0	0	0	0	0	0	0
PM In	8	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	8	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Olive Avenue and Verdemont Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	1	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	3	0	0	0	0	0	0	0	0	0	0	0	0
PM In	4	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	2	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	2705 W. Lexington Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					60%							
N	0%	30%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	30	0	0	0	0	18	0	0	0	0	0	0	0

	Int. #:	7	University Pkwy/I-215 SB Ramps									
AM Out		30%	30%									
PM In	0%	0%	0%	0%	60%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	30%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%

AM Out	8	0	2	2	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	6	0	0	0	0	0	0
PM Out	30	0	9	9	0	0	0	0	0	0	0	0

Zone #	11	Hallmark Parkway and Shenandoah Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					60%							
N	0%	30%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		30%	30%									
PM In	0%	0%	0%	0%	60%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	30%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	65	0	0	0	0	39	0	0	0	0	0	0	0
AM Out	17	0	5	5	0	0	0	0	0	0	0	0	0
PM In	22	0	0	0	0	13	0	0	0	0	0	0	0
PM Out	66	0	20	20	0	0	0	0	0	0	0	0	0

Zone #	12	Little League Drive and Palm Avenue

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	83	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	110	0	0	0	0	0	0	0	0	0	0	0	0
PM In	258	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	238	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	13	Shopping (SOUTH)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				3%								
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	131	0	0	0	4	0	0	0	0	0	0	0	0
AM Out	116	0	0	0	0	0	0	0	0	0	0	0	0
PM In	186	0	0	0	6	0	0	0	0	0	0	0	0
PM Out	188	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	14	Palm Avenue and Industrial Parkway (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	56	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	30	0	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	63	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	15	2705 W. Lexington Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					70%							
N	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out			70%									
PM In	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	17	0	0	0	0	12	0	0	0	0	0	0	0
AM Out	5	0	0	4	0	0	0	0	0	0	0	0	0
PM In	6	0	0	0	0	4	0	0	0	0	0	0	0
PM Out	17	0	0	12	0	0	0	0	0	0	0	0	0

Int. #:	7	University Pkwy/I-215 SB Ramps

Zone #	16	Hallmark Parkway and Shenandoah Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					70%							
N	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out			70%									
PM In	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	37	0	0	0	0	26	0	0	0	0	0	0	0
AM Out	10	0	0	7	0	0	0	0	0	0	0	0	0
PM In	12	0	0	0	0	8	0	0	0	0	0	0	0
PM Out	38	0	0	27	0	0	0	0	0	0	0	0	0

Zone #	17	Renaissance SP (Marketplace)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In				1%	1%							
N	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		1%										
PM In	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	121	0	0	0	1	2	0	0	0	0	0	0	0
AM Out	86	0	1	0	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	1	3	0	0	0	0	0	0	0
PM Out	201	0	2	0	0	0	0	0	0	0	0	0	0

Zone #	18	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	19	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	20	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Enter only in blue cells	Yellow cells calculate

Int. #:	8	University Pkwy/I-215 NB Ramps

N

TOTAL CUMULATIVE PROJECTS TRAFFIC													
Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	7	0	0	55	0	0	0	0	87	0	41
AM Out		0	23	0	0	42	0	0	0	0	0	0	3
AM Tot		0	30	0	0	97	0	0	0	0	87	0	44
PM In		0	7	0	0	35	0	0	0	0	38	0	19
PM Out		0	47	0	0	22	0	0	0	0	0	0	7
PM Tot		0	54	0	0	57	0	0	0	0	38	0	26

Zone #	1	Palm Avenue and Industrial Parkway (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	18	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	10	0	0	0	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	21	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	2	2586 Shenandoah Way

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	3	3909 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					30%					30%		
N	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		30%										
PM In	0%	0%	0%	0%	30%	0%	0%	0%	0%	30%	0%	0%
PM Out	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	22	0	0	0	0	7	0	0	0	0	7	0	0
AM Out	22	0	7	0	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	6	0	0	0	0	6	0	0
PM Out	19	0	6	0	0	0	0	0	0	0	0	0	0

Zone #	4	4680 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					30%					30%		
N	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		30%										
PM In	0%	0%	0%	0%	30%	0%	0%	0%	0%	30%	0%	0%
PM Out	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	42	0	0	0	0	13	0	0	0	0	13	0	0
AM Out	26	0	8	0	0	0	0	0	0	0	0	0	0
PM In	32	0	0	0	0	10	0	0	0	0	10	0	0
PM Out	34	0	10	0	0	0	0	0	0	0	0	0	0

Zone #	5	Kendall Drive and Palm Avenue

Int. #:	8	University Pkwy/I-215 NB Ramps

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	162	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	157	0	0	0	0	0	0	0	0	0	0	0	0
PM In	90	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	86	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	6	2424 Kendall Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		25%										15%
N	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%
AM Out					25%							
PM In	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%
PM Out	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	29	0	7	0	0	0	0	0	0	0	0	0	4
AM Out	26	0	0	0	0	7	0	0	0	0	0	0	0
PM In	26	0	7	0	0	0	0	0	0	0	0	0	4
PM Out	29	0	0	0	0	7	0	0	0	0	0	0	0

Zone #	7	University Parkway and State Street

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												20%
N	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%
AM Out					20%							
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%
PM Out	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	185	0	0	0	0	0	0	0	0	0	0	0	37
AM Out	177	0	0	0	0	35	0	0	0	0	0	0	0
PM In	77	0	0	0	0	0	0	0	0	0	0	0	15
PM Out	77	0	0	0	0	15	0	0	0	0	0	0	0

Zone #	8	Kendall Drive and Campus Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	8	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	4	0	0	0	0	0	0	0	0	0	0	0	0
PM In	8	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	8	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Olive Avenue and Verdemont Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	1	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	3	0	0	0	0	0	0	0	0	0	0	0	0
PM In	4	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	2	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	2705 W. Lexington Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					30%					30%		
N	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	30	0	0	0	0	9	0	0	0	0	9	0	0

Int. #:	8	University Pkwy/I-215 NB Ramps										
AM Out		30%										
PM In	0%	0%	0%	0%	30%	0%	0%	0%	0%	30%	0%	0%
PM Out	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

AM Out	8	0	2	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	3	0	0	0	0	3	0	0
PM Out	30	0	9	0	0	0	0	0	0	0	0	0	0

Zone #	11	Hallmark Parkway and Shenandoah Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					30%					30%		
N	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out		30%										
PM In	0%	0%	0%	0%	30%	0%	0%	0%	0%	30%	0%	0%
PM Out	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	65	0	0	0	0	20	0	0	0	0	20	0	0
AM Out	17	0	5	0	0	0	0	0	0	0	0	0	0
PM In	22	0	0	0	0	7	0	0	0	0	7	0	0
PM Out	66	0	20	0	0	0	0	0	0	0	0	0	0

Zone #	12	Little League Drive and Palm Avenue

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	83	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	110	0	0	0	0	0	0	0	0	0	0	0	0
PM In	258	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	238	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	13	Shopping (SOUTH)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					3%							
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%
AM Out												3%
PM In	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	131	0	0	0	0	4	0	0	0	0	0	0	0
AM Out	116	0	0	0	0	0	0	0	0	0	0	0	3
PM In	186	0	0	0	0	6	0	0	0	0	0	0	0
PM Out	188	0	0	0	0	0	0	0	0	0	0	0	6

Zone #	14	Palm Avenue and Industrial Parkway (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	56	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	30	0	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	63	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	15	2705 W. Lexington Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										70%		
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	70%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	17	0	0	0	0	0	0	0	0	0	12	0	0
AM Out	5	0	0	0	0	0	0	0	0	0	0	0	0
PM In	6	0	0	0	0	0	0	0	0	0	4	0	0
PM Out	17	0	0	0	0	0	0	0	0	0	0	0	0

Int. #:	8	University Pkwy/I-215 NB Ramps

Zone #	16	Hallmark Parkway and Shenandoah Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										70%		
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	70%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	37	0	0	0	0	0	0	0	0	0	26	0	0
AM Out	10	0	0	0	0	0	0	0	0	0	0	0	0
PM In	12	0	0	0	0	0	0	0	0	0	8	0	0
PM Out	38	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	17	Renaissance SP (Marketplace)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					1%							
N	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
AM Out		1%										1%
PM In	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	121	0	0	0	0	2	0	0	0	0	0	0	0
AM Out	86	0	1	0	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	0	3	0	0	0	0	0	0	0
PM Out	201	0	2	0	0	0	0	0	0	0	0	0	1

Zone #	18	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	19	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	20	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
N	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Enter only in blue cells	Yellow cells calculate

Int. #:	9	University Pkwy/Kendall Dr

Y

TOTAL CUMULATIVE PROJECTS TRAFFIC													
Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		12	0	0	0	26	17	0	0	37	66	60	0
AM Out		31	19	48	0	0	0	19	62	10	0	0	0
AM Tot		43	19	48	0	26	17	19	62	47	66	60	0
PM In		10	0	0	0	20	23	0	0	18	30	79	0
PM Out		21	23	43	0	0	0	21	76	12	0	0	0
PM Tot		31	23	43	0	20	23	21	76	30	30	79	0

Zone #	1	Palm Avenue and Industrial Parkway (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In						5%					20%	
Y	0%	0%	0%	0%	0%	0%	5%	20%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	5%	0%	0%	0%		20%	0%
PM Out	0%	0%	0%	0%	0%	0%	5%	20%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	18	0	0	0	0	0	1	0	0	0	0	4	0
AM Out	10	0	0	0	0	0	0	1	2	0	0	0	0
PM In	10	0	0	0	0	0	1	0	0	0	0	2	0
PM Out	21	0	0	0	0	0	0	1	4	0	0	0	0

Zone #	2	2586 Shenandoah Way

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	3	3909 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					10%				10%	20%		
Y	10%	10%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	10%	0%	0%	0%	10%	20%	0%	0%
PM Out	10%	10%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	22	0	0	0	0	2	0	0	0	2	4	0	0
AM Out	22	2	2	4	0	0	0	0	0	0	0	0	0
PM In	19	0	0	0	0	2	0	0	0	2	4	0	0
PM Out	19	2	2	4	0	0	0	0	0	0	0	0	0

Zone #	4	4680 N. Hallmark Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					10%				5%	15%		
Y	5%	10%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	10%	0%	0%	0%	5%	15%	0%	0%
PM Out	5%	10%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	42	0	0	0	0	4	0	0	0	2	6	0	0
AM Out	26	1	3	4	0	0	0	0	0	0	0	0	0
PM In	32	0	0	0	0	3	0	0	0	2	5	0	0
PM Out	34	2	3	5	0	0	0	0	0	0	0	0	0

Zone #	5	Kendall Drive and Palm Avenue

Int. #:	9	University Pkwy/Kendall Dr

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In						5%					20%	
Y	0%	0%	0%	0%	0%	0%	5%	20%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	20%	0%
PM Out	0%	0%	0%	0%	0%	0%	5%	20%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	162	0	0	0	0	0	8	0	0	0	0	32	0
AM Out	157	0	0	0	0	0	0	8	31	0	0	0	0
PM In	90	0	0	0	0	0	5	0	0	0	0	18	0
PM Out	86	0	0	0	0	0	0	4	17	0	0	0	0

Zone #	6	2424 Kendall Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	40%					15%					25%	
Y	0%	0%	0%	0%	0%	0%	15%	25%	40%	0%	0%	0%
AM Out												
PM In	40%	0%	0%	0%	0%	15%	0%	0%	0%	0%	25%	0%
PM Out	0%	0%	0%	0%	0%	0%	15%	25%	40%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	29	12	0	0	0	0	4	0	0	0	0	7	0
AM Out	26	0	0	0	0	0	0	4	7	10	0	0	0
PM In	26	10	0	0	0	0	4	0	0	0	0	7	0
PM Out	29	0	0	0	0	0	0	4	7	12	0	0	0

Zone #	7	University Parkway and State Street

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%				15%	20%		
Y	15%	5%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	5%	0%	0%	0%	15%	20%	0%	0%
PM Out	15%	5%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	185	0	0	0	0	9	0	0	0	28	37	0	0
AM Out	177	27	9	35	0	0	0	0	0	0	0	0	0
PM In	77	0	0	0	0	4	0	0	0	12	15	0	0
PM Out	77	12	4	15	0	0	0	0	0	0	0	0	0

Zone #	8	Kendall Drive and Campus Parkway

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	8	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	4	0	0	0	0	0	0	0	0	0	0	0	0
PM In	8	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	8	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	9	Olive Avenue and Verdemont Drive

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	1	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	3	0	0	0	0	0	0	0	0	0	0	0	0
PM In	4	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	2	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	10	2705 W. Lexington Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%				5%	20%		
Y	5%	5%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	30	0	0	0	0	2	0	0	0	2	6	0	0

Int. #:	9	University Pkwy/Kendall Dr										
AM Out												
PM In	0%	0%	0%	0%	5%	0%	0%	0%	5%	20%	0%	0%
PM Out	5%	5%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%

AM Out	8	0	0	2	0	0	0	0	0	0	0	0	0
PM In	10	0	0	0	0	1	0	0	0	1	2	0	0
PM Out	30	2	2	6	0	0	0	0	0	0	0	0	0

Zone #	11	Hallmark Parkway and Shenandoah Way (PC)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					5%				5%	20%		
Y	5%	5%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	5%	0%	0%	0%	5%	20%	0%	0%
PM Out	5%	5%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	65	0	0	0	0	3	0	0	0	3	13	0	0
AM Out	17	1	1	3	0	0	0	0	0	0	0	0	0
PM In	22	0	0	0	0	1	0	0	0	1	4	0	0
PM Out	66	3	3	13	0	0	0	0	0	0	0	0	0

Zone #	12	Little League Drive and Palm Avenue

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In						5%					20%	
Y	0%	0%	0%	0%	0%	0%	5%	20%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	20%	0%
PM Out	0%	0%	0%	0%	0%	0%	5%	20%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	83	0	0	0	0	0	4	0	0	0	0	17	0
AM Out	110	0	0	0	0	0	0	6	22	0	0	0	0
PM In	258	0	0	0	0	0	13	0	0	0	0	52	0
PM Out	238	0	0	0	0	0	0	12	48	0	0	0	0

Zone #	13	Shopping (SOUTH)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					3%							
Y	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	131	0	0	0	0	4	0	0	0	0	0	0	0
AM Out	116	0	3	0	0	0	0	0	0	0	0	0	0
PM In	186	0	0	0	0	6	0	0	0	0	0	0	0
PM Out	188	0	6	0	0	0	0	0	0	0	0	0	0

Zone #	14	Palm Avenue and Industrial Parkway (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	56	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	30	0	0	0	0	0	0	0	0	0	0	0	0
PM In	30	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	63	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	15	2705 W. Lexington Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	17	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	5	0	0	0	0	0	0	0	0	0	0	0	0
PM In	6	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	17	0	0	0	0	0	0	0	0	0	0	0	0

Int. #:	9	University Pkwy/Kendall Dr

Zone #	16	Hallmark Parkway and Shenandoah Way (TRUCKS)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	37	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	10	0	0	0	0	0	0	0	0	0	0	0	0
PM In	12	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	38	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	17	Renaissance SP (Marketplace)

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					1%							
Y	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	121	0	0	0	0	2	0	0	0	0	0	0	0
AM Out	86	0	1	0	0	0	0	0	0	0	0	0	0
PM In	188	0	0	0	0	3	0	0	0	0	0	0	0
PM Out	201	0	3	0	0	0	0	0	0	0	0	0	0

Zone #	18	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	19	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	20	0

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	0	0	0	0	0	0	0	0	0	0	0	0	0
PM In	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	0	0	0	0	0	0	0	0	0	0	0	0	0

CUMULATIVE PROJECTS - HAND ENTERED FROM TRAFFIC STUDIES

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Palm Ave/Hallmark Parkway												
2	Palm Ave/I-215 SB Ramps												
3	Palm Ave/I-215 NB Ramps												
4	Palm Ave/Kendall Dr_Little League Dr												
5	Hallmark Pkwy/Saratoga Ave												
6	University Pkwy/Hallmark Pkwy												
7	University Pkwy/I-215 SB Ramps				1			1					
8	University Pkwy/I-215 NB Ramps		1			1	1						1
9	University Pkwy/Kendall Dr					2							

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Palm Ave/Hallmark Parkway												
2	Palm Ave/I-215 SB Ramps												
3	Palm Ave/I-215 NB Ramps												
4	Palm Ave/Kendall Dr_Little League Dr												
5	Hallmark Pkwy/Saratoga Ave												
6	University Pkwy/Hallmark Pkwy		1										
7	University Pkwy/I-215 SB Ramps		1		2			1		1			
8	University Pkwy/I-215 NB Ramps	1	1			2	2						1
9	University Pkwy/Kendall Dr					4							

APPENDIX E

SBTAM MODEL PLOTS AND B-TURNS WORKSHEETS

Project:	IPT Distribution Center II	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	1	**Total Difference**	28
		Existing Year Counts	2016
North/South Street	Palm Ave	**Difference Ex to B-O**	24
		Percent	0.86
East/West Street	Hallmark Pkwy	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	19

Date: 04/20/16

Model Base Year: **2012**

AM 0.38

		574	253
0			58
			453
		125	199

IN 831
OUT 831
BAL 0

PM 0.28

		488	1044
			722
			208
		290	332

IN 1542
OUT 1542
BAL 0

Model Build-out Year: **2040 Build-out**

		1006	632
0			114
			453
		581	546

IN 1666
OUT 1666
BAL 0

		959	2278
			761
			361
		671	1591

IN 3311
OUT 3310
BAL -1

Existing Year Counts **2016**

		357	150
0	14		30
	8		88
		276	133

IN 528
OUT 528
BAL 0

		160	347
	6		154
	4		83
		93	211

IN 529
OUT 529
BAL 0

Study Year Forecast **2035 Build-out**

		468	248
0	14		44
	8		88
		394	222

IN 743
OUT 743
BAL 0

		249	581
	6		161
	4		112
		165	450

IN 865
OUT 865
BAL 0

Intersection: Palm Ave Hallmark Pkwy

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	9	SOUTH LEG	
	THRU	123	IN ...	222
	RIGHT	1	OUT ...	394
SOUTH BOUND	LEFT	84	NORTH LEG	
	THRU	272	IN ...	468
	RIGHT	1	OUT ...	248
EAST BOUND	LEFT	3	WEST LEG	
	THRU	3	IN ...	8
	RIGHT	2	OUT ...	14
WEST BOUND	LEFT	2	EAST LEG	
	THRU	4	IN ...	44
	RIGHT	24	OUT ...	88
		528		1,487

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	9	10
	THRU	123	208
	RIGHT	1	1
SOUTH BOUND	LEFT	84	84
	THRU	272	387
	RIGHT	1	1
EAST BOUND	LEFT	3	3
	THRU	3	3
	RIGHT	2	2
WEST BOUND	LEFT	2	4
	THRU	4	4
	RIGHT	24	36
		528	743

Intersection: Palm Ave Hallmark Pkwy

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH	LEFT	1	SOUTH LEG	
BOUND	THRU	201	IN ...	450
	RIGHT	9	OUT ...	165
SOUTH	LEFT	71	NORTH LEG	
BOUND	THRU	87	IN ...	249
	RIGHT	2	OUT ...	581
EAST	LEFT	0	WEST LEG	
BOUND	THRU	3	IN ...	4
	RIGHT	1	OUT ...	6
WEST	LEFT	5	EAST LEG	
BOUND	THRU	3	IN ...	161
	RIGHT	146	OUT ...	112
		529		1,730

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

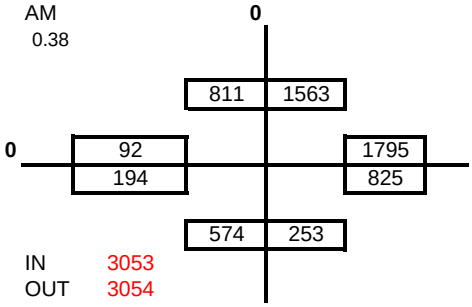
APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH	LEFT	1	2
BOUND	THRU	201	430
	RIGHT	9	18
SOUTH	LEFT	71	92
BOUND	THRU	87	157
	RIGHT	2	2
EAST	LEFT	0	0
BOUND	THRU	3	3
	RIGHT	1	1
WEST	LEFT	5	7
BOUND	THRU	3	2
	RIGHT	146	152
		529	865

Project:	IPT Distribution Center II	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	2	**Total Difference**	28
		Existing Year Counts	2016
North/South Street	Palm Ave	**Difference Ex to B-O**	24
		Percent	0.86
East/West Street	I-215 SB Ramps	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	19

Date: 04/20/16

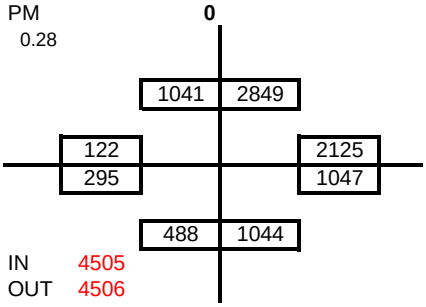
Model Base Year: **2012**

AM 0.38



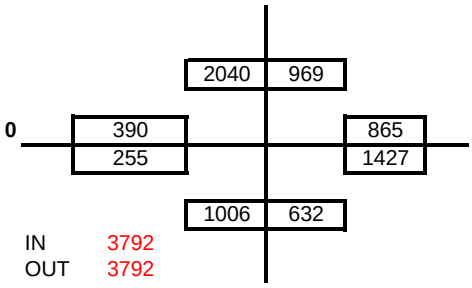
IN	3053
OUT	3054
BAL	1

PM 0.28

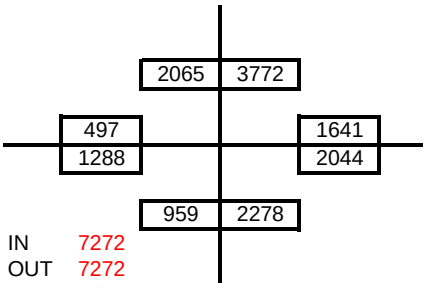


IN	4505
OUT	4506
BAL	1

Model Build-out Year: **2040** **Build-out**

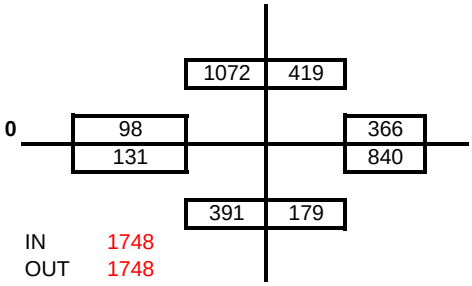


IN	3792
OUT	3792
BAL	0

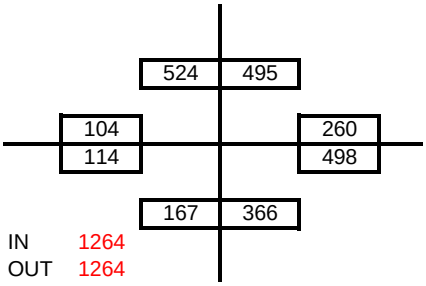


IN	7272
OUT	7272
BAL	0

Existing Year Counts **2016**

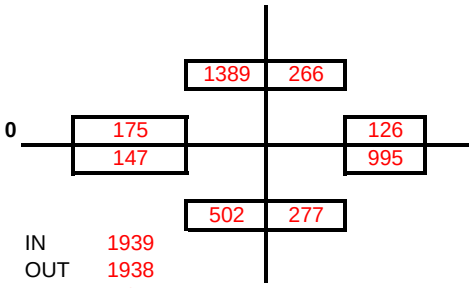


IN	1748
OUT	1748
BAL	0

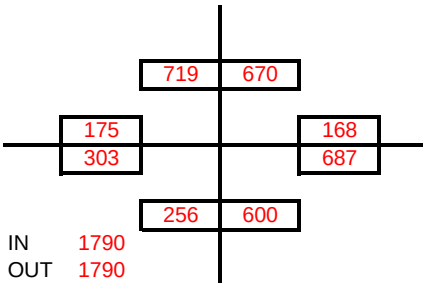


IN	1264
OUT	1264
BAL	0

Study Year Forecast **2035** **Build-out**



IN	1939
OUT	1938
BAL	0



IN	1790
OUT	1790
BAL	0

Intersection: Palm Ave I-215 SB Ramps

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH	LEFT	24	SOUTH LEG	
BOUND	THRU	108	IN ...	277
	RIGHT	47	OUT ...	502
SOUTH	LEFT	723	NORTH LEG	
BOUND	THRU	276	IN ...	1,389
	RIGHT	73	OUT ...	266
EAST	LEFT	33	WEST LEG	
BOUND	THRU	70	IN ...	147
	RIGHT	28	OUT ...	175
WEST	LEFT	87	EAST LEG	
BOUND	THRU	1	IN ...	126
	RIGHT	278	OUT ...	995
		1,748		3,877

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH	LEFT	24	54
BOUND	THRU	108	149
	RIGHT	47	74
SOUTH	LEFT	723	845
BOUND	THRU	276	423
	RIGHT	73	121
EAST	LEFT	33	31
BOUND	THRU	70	76
	RIGHT	28	40
WEST	LEFT	87	40
BOUND	THRU	1	0
	RIGHT	278	86
		1,748	1,938

Intersection: Palm Ave I-215 SB Ramps

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH	LEFT	15	SOUTH LEG	
BOUND	THRU	222	IN ...	600
	RIGHT	129	OUT ...	256
SOUTH	LEFT	317	NORTH LEG	
BOUND	THRU	124	IN ...	719
	RIGHT	83	OUT ...	670
EAST	LEFT	42	WEST LEG	
BOUND	THRU	52	IN ...	303
	RIGHT	20	OUT ...	175
WEST	LEFT	23	EAST LEG	
BOUND	THRU	6	IN ...	168
	RIGHT	231	OUT ...	687
		1,264		3,579

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

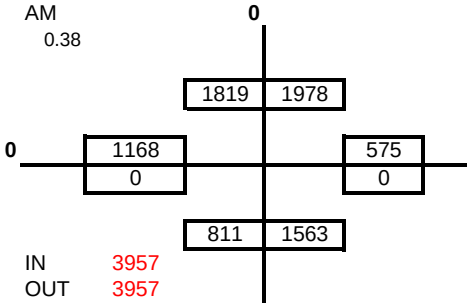
APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH	LEFT	15	29
BOUND	THRU	222	395
	RIGHT	129	177
SOUTH	LEFT	317	390
BOUND	THRU	124	186
	RIGHT	83	142
EAST	LEFT	42	126
BOUND	THRU	52	120
	RIGHT	20	56
WEST	LEFT	23	14
BOUND	THRU	6	4
	RIGHT	231	150
		1,264	1,790

Project:	IPT Distribution Center II	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	3	**Total Difference**	28
		Existing Year Counts	2016
North/South Street	Palm Ave	**Difference Ex to B-O**	24
		Percent	0.86
East/West Street	I-215 NB Ramps	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	19

Date: 04/20/16

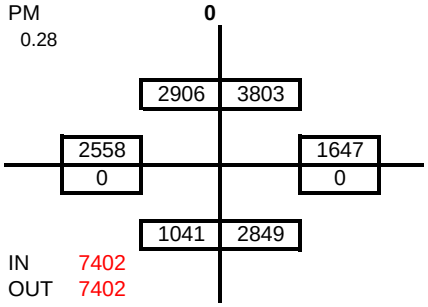
Model Base Year: **2012**

AM 0.38



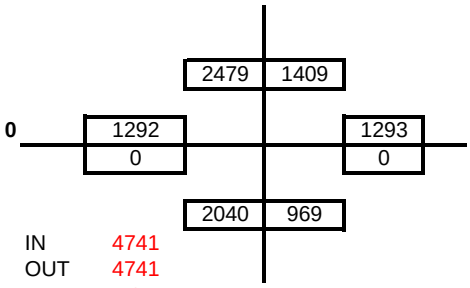
IN	3957
OUT	3957
BAL	0

PM 0.28

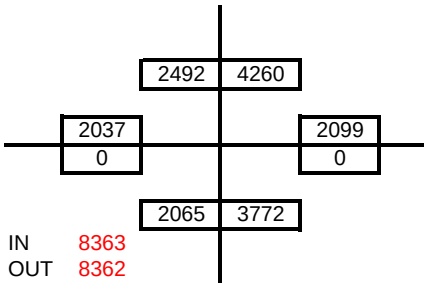


IN	7402
OUT	7402
BAL	0

Model Build-out Year: **2040** **Build-out**

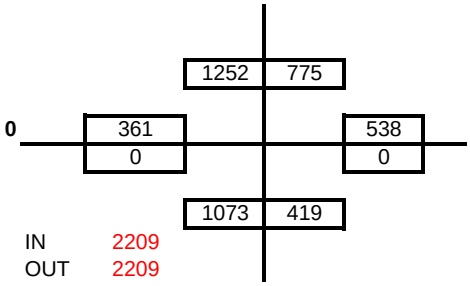


IN	4741
OUT	4741
BAL	0

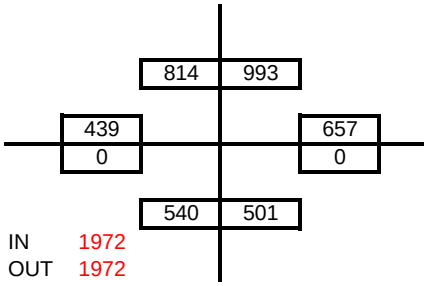


IN	8363
OUT	8362
BAL	-1

Existing Year Counts **2016**

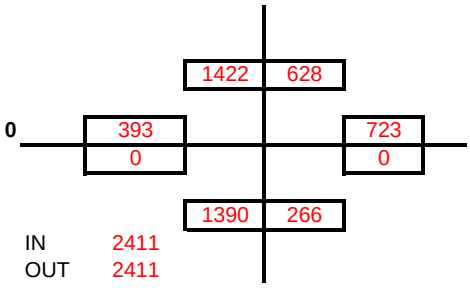


IN	2209
OUT	2209
BAL	0

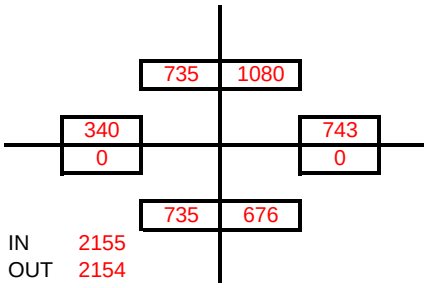


IN	1972
OUT	1972
BAL	0

Study Year Forecast **2035** **Build-out**



IN	2411
OUT	2411
BAL	0



IN	2155
OUT	2154
BAL	0

Intersection: Palm Ave I-215 NB Ramps

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

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*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	29	SOUTH LEG	
	THRU	390	IN ...	266
	RIGHT	0	OUT ...	1,390
SOUTH BOUND	LEFT	0	NORTH LEG	
	THRU	921	IN ...	1,422
	RIGHT	331	OUT ...	628
EAST BOUND	LEFT	0	WEST LEG	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	393
WEST BOUND	LEFT	152	EAST LEG	
	THRU	1	IN ...	723
	RIGHT	385	OUT ...	0
		2,209		4,822

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	29	33
	THRU	390	231
	RIGHT	0	0
SOUTH BOUND	LEFT	0	0
	THRU	921	1,069
	RIGHT	331	358
EAST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
WEST BOUND	LEFT	152	321
	THRU	1	2
	RIGHT	385	397
		2,209	2,411

Intersection: Palm Ave I-215 NB Ramps

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	60	SOUTH LEG	
	THRU	441	IN ...	676
	RIGHT	0	OUT ...	735
SOUTH BOUND	LEFT	0	NORTH LEG	
	THRU	438	IN ...	735
	RIGHT	376	OUT ...	1,080
EAST BOUND	LEFT	0	WEST LEG	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	340
WEST BOUND	LEFT	102	EAST LEG	
	THRU	3	IN ...	743
	RIGHT	552	OUT ...	0
		1,972		4,309

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

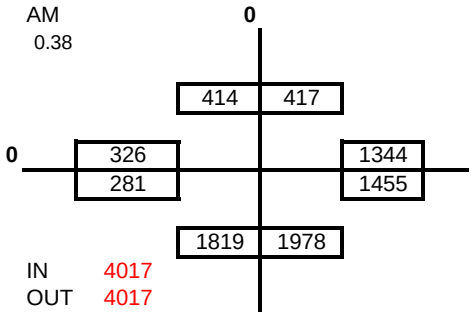
APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	60	102
	THRU	441	571
	RIGHT	0	0
SOUTH BOUND	LEFT	0	0
	THRU	438	505
	RIGHT	376	234
EAST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
WEST BOUND	LEFT	102	229
	THRU	3	4
	RIGHT	552	508
		1,972	2,154

Project:	IPT Distribution Center II	**Model Base Year**	2012	
Condition:	Build-out	**Model Build-out Year**	2040	
Intersection Number:	4	**Total Difference**	28	
		Existing Year Counts	2016	
North/South Street	Palm Ave	**Difference Ex to B-O**	24	
		Percent	0.86	
East/West Street	Kendall Dr	**Study Year Forecast**	2035	Build-out
		Difference Ex to Forecast	19	

Date: 04/20/16

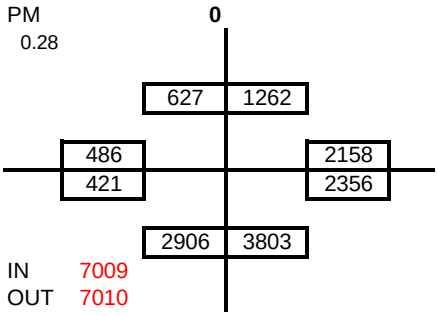
Model Base Year: **2012**

AM 0.38



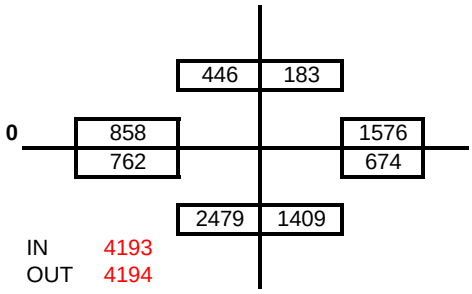
IN 4017
OUT 4017
BAL 0

PM 0.28

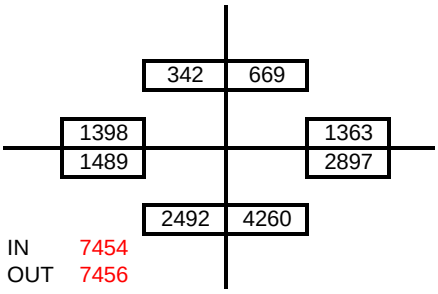


IN 7009
OUT 7010
BAL 1

Model Build-out Year: **2040** **Build-out**

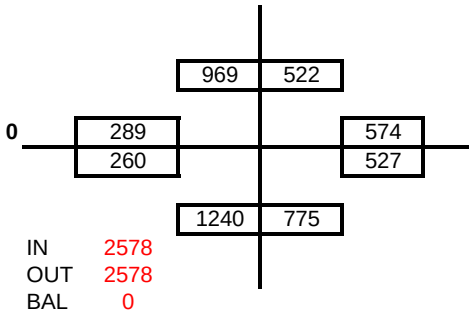


IN 4193
OUT 4194
BAL 1

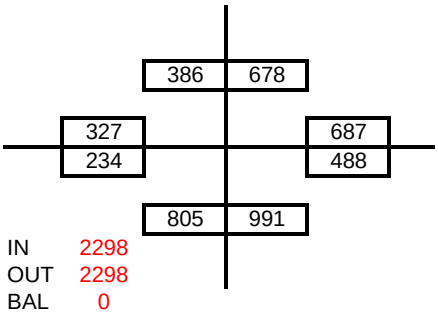


IN 7454
OUT 7456
BAL 2

Existing Year Counts **2016**

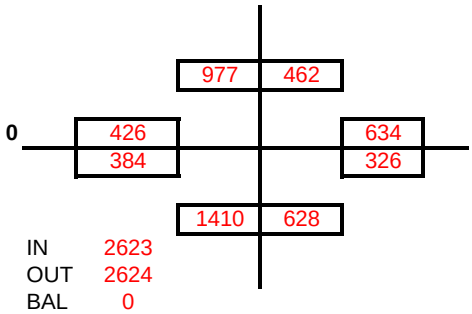


IN 2578
OUT 2578
BAL 0

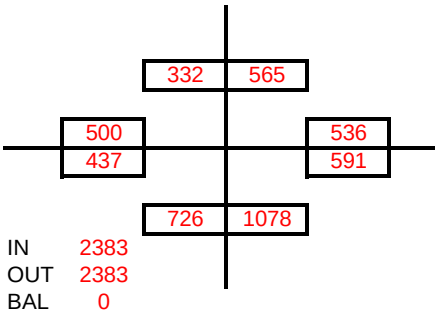


IN 2298
OUT 2298
BAL 0

Study Year Forecast **2035** **Build-out**



IN 2623
OUT 2624
BAL 0



IN 2383
OUT 2383
BAL 0

Intersection: Palm Ave Kendall Dr

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	121	SOUTH LEG	
	THRU	343	IN ...	628
	RIGHT	311	OUT ...	1,410
SOUTH BOUND	LEFT	141	NORTH LEG	
	THRU	757	IN ...	977
	RIGHT	71	OUT ...	462
EAST BOUND	LEFT	25	WEST LEG	
	THRU	75	IN ...	384
	RIGHT	160	OUT ...	426
WEST BOUND	LEFT	323	EAST LEG	
	THRU	97	IN ...	634
	RIGHT	154	OUT ...	326
		2,578		5,247

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	121	171
	THRU	343	286
	RIGHT	311	171
SOUTH BOUND	LEFT	141	82
	THRU	757	789
	RIGHT	71	106
EAST BOUND	LEFT	25	36
	THRU	75	72
	RIGHT	160	275
WEST BOUND	LEFT	323	346
	THRU	97	149
	RIGHT	154	139
		2,578	2,624

Intersection: Palm Ave Kendall Dr

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH	LEFT	183	SOUTH LEG	
BOUND	THRU	476	IN ...	1,078
	RIGHT	332	OUT ...	726
SOUTH	LEFT	92	NORTH LEG	
BOUND	THRU	260	IN ...	332
	RIGHT	34	OUT ...	565
EAST	LEFT	45	WEST LEG	
BOUND	THRU	64	IN ...	437
	RIGHT	125	OUT ...	500
WEST	LEFT	420	EAST LEG	
BOUND	THRU	110	IN ...	536
	RIGHT	157	OUT ...	591
		2,298		4,765

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

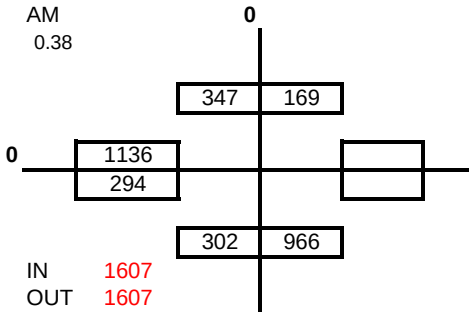
APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH	LEFT	183	312
BOUND	THRU	476	396
	RIGHT	332	370
SOUTH	LEFT	92	84
BOUND	THRU	260	201
	RIGHT	34	47
EAST	LEFT	45	72
BOUND	THRU	64	137
	RIGHT	125	228
WEST	LEFT	420	298
BOUND	THRU	110	141
	RIGHT	157	98
		2,298	2,383

Project:	IPT Distribution Center II	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	5	**Total Difference**	28
		Existing Year Counts	2016
North/South Street	Hallmark Pkwy	**Difference Ex to B-O**	24
		Percent	0.86
East/West Street	Saratoga Way	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	19

Date: 04/20/16

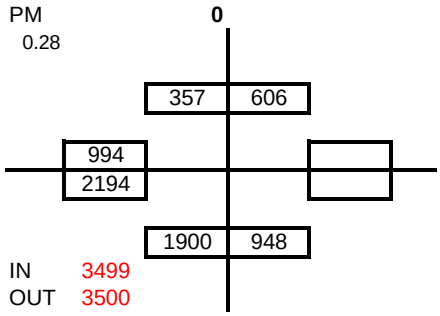
Model Base Year: **2012**

AM 0.38



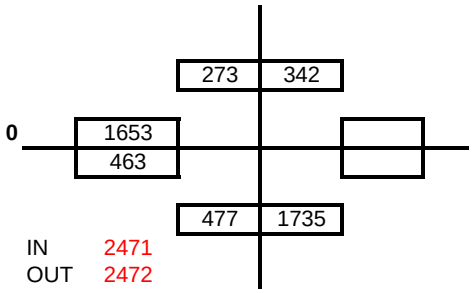
IN	1607
OUT	1607
BAL	0

PM 0.28

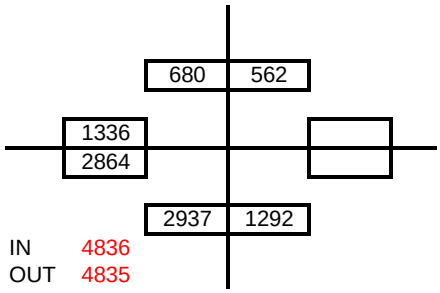


IN	3499
OUT	3500
BAL	1

Model Build-out Year: **2040** **Build-out**

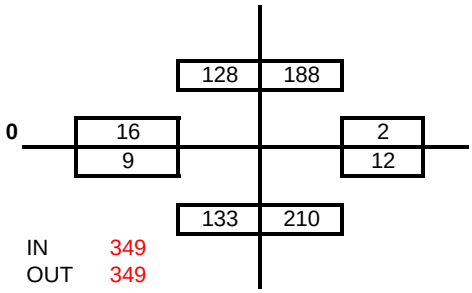


IN	2471
OUT	2472
BAL	1

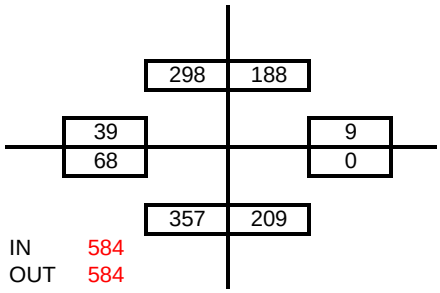


IN	4836
OUT	4835
BAL	-1

Existing Year Counts **2016**

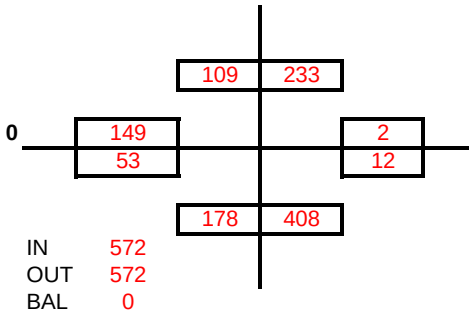


IN	349
OUT	349
BAL	0

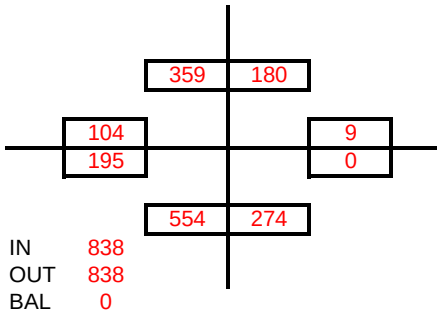


IN	584
OUT	584
BAL	0

Study Year Forecast **2035** **Build-out**



IN	572
OUT	572
BAL	0



IN	838
OUT	838
BAL	0

Intersection: Hallmark Pkwy Saratoga Way

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	12	SOUTH LEG	
	THRU	188	IN ...	408
	RIGHT	10	OUT ...	178
SOUTH BOUND	LEFT	2	NORTH LEG	
	THRU	122	IN ...	109
	RIGHT	4	OUT ...	233
EAST BOUND	LEFT	0	WEST LEG	
	THRU	0	IN ...	53
	RIGHT	9	OUT ...	149
WEST BOUND	LEFT	2	EAST LEG	
	THRU	0	IN ...	2
	RIGHT	0	OUT ...	12
		349		1,144

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	12	144
	THRU	188	233
	RIGHT	10	12
SOUTH BOUND	LEFT	2	0
	THRU	122	116
	RIGHT	4	6
EAST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	9	60
WEST BOUND	LEFT	2	2
	THRU	0	0
	RIGHT	0	0
		349	572

Intersection: Hallmark Pkwy Saratoga Way

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	31	SOUTH LEG	
	THRU	178	IN ...	274
	RIGHT	0	OUT ...	554
SOUTH BOUND	LEFT	0	NORTH LEG	
	THRU	290	IN ...	359
	RIGHT	8	OUT ...	180
EAST BOUND	LEFT	10	WEST LEG	
	THRU	0	IN ...	195
	RIGHT	58	OUT ...	104
WEST BOUND	LEFT	9	EAST LEG	
	THRU	0	IN ...	9
	RIGHT	0	OUT ...	0
		584		1,676

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	31	93
	THRU	178	169
	RIGHT	0	0
SOUTH BOUND	LEFT	0	0
	THRU	290	357
	RIGHT	8	11
EAST BOUND	LEFT	10	11
	THRU	0	0
	RIGHT	58	188
WEST BOUND	LEFT	9	9
	THRU	0	0
	RIGHT	0	0
		584	838

Project:	IPT Distribution Center II	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	6	**Total Difference**	28
		Existing Year Counts	2016
North/South Street	University Pkwy	**Difference Ex to B-O**	24
		Percent	0.86
East/West Street	Hallmark Pkwy	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	19

Date: 04/20/16

Model Base Year: **2012**

AM 0.38

		1267	2215	
0	966			39
	302			61
		758	2391	

IN 3999
OUT 4000
BAL 1

PM 0.28

		2136	4120	
	948			121
	1900			103
		1891	2906	

IN 7063
OUT 7062
BAL -1

Model Build-out Year: **2040** **Build-out**

		2859	2233	
0	1735			86
	477			237
		1709	2492	

IN 5914
OUT 5914
BAL 0

		2419	5468	
	1292			412
	2937			229
		2376	3597	

IN 9365
OUT 9365
BAL 0

Existing Year Counts **2016**

		663	653	
0	381			30
	254			27
		388	502	

IN 1449
OUT 1449
BAL 0

		831	951	
	505			61
	731			65
		631	529	

IN 2152
OUT 2152
BAL 0

Study Year Forecast **2035** **Build-out**

		1074	658	
0	579			42
	299			72
		633	528	

IN 1943
OUT 1943
BAL 0

		885	1207	
	570			116
	928			89
		723	660	

IN 2589
OUT 2590
BAL 0

Intersection: University Pkwy Hallmark Pkwy

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH	LEFT	79	SOUTH LEG	
BOUND	THRU	419	IN ...	528
	RIGHT	4	OUT ...	633
SOUTH	LEFT	17	NORTH LEG	
BOUND	THRU	347	IN ...	1,074
	RIGHT	299	OUT ...	658
EAST	LEFT	211	WEST LEG	
BOUND	THRU	6	IN ...	299
	RIGHT	37	OUT ...	579
WEST	LEFT	4	EAST LEG	
BOUND	THRU	3	IN ...	42
	RIGHT	23	OUT ...	72
		1,449		3,885

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH	LEFT	79	109
BOUND	THRU	419	406
	RIGHT	4	10
SOUTH	LEFT	17	47
BOUND	THRU	347	567
	RIGHT	299	465
EAST	LEFT	211	223
BOUND	THRU	6	16
	RIGHT	37	59
WEST	LEFT	4	8
BOUND	THRU	3	5
	RIGHT	23	29
		1,449	1,943

Intersection: University Pkwy Hallmark Pkwy

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH	LEFT	142	SOUTH LEG	
BOUND	THRU	376	IN ...	660
	RIGHT	11	OUT ...	723
SOUTH	LEFT	40	NORTH LEG	
BOUND	THRU	440	IN ...	885
	RIGHT	351	OUT ...	1,207
EAST	LEFT	536	WEST LEG	
BOUND	THRU	14	IN ...	928
	RIGHT	181	OUT ...	570
WEST	LEFT	10	EAST LEG	
BOUND	THRU	12	IN ...	116
	RIGHT	39	OUT ...	89
		2,152		5,179

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

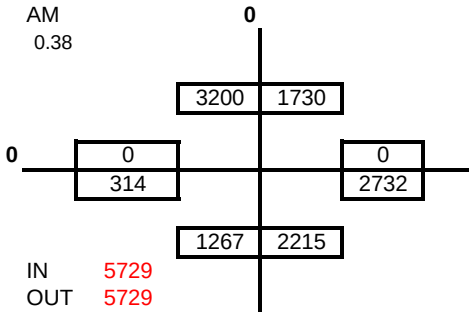
APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH	LEFT	142	180
BOUND	THRU	376	464
	RIGHT	11	17
SOUTH	LEFT	40	50
BOUND	THRU	440	467
	RIGHT	351	367
EAST	LEFT	536	670
BOUND	THRU	14	22
	RIGHT	181	236
WEST	LEFT	10	20
BOUND	THRU	12	23
	RIGHT	39	73
		2,152	2,590

Project:	IPT Distribution Center II	**Model Base Year**	2012	
Condition:	Build-out	**Model Build-out Year**	2040	
Intersection Number:	7	**Total Difference**	28	
		Existing Year Counts	2016	
North/South Street	University Pkwy	**Difference Ex to B-O**	24	
		Percent	0.86	
East/West Street	I-215 SB Ramps	**Study Year Forecast**	2035	Build-out
		Difference Ex to Forecast	19	

Date: 04/20/16

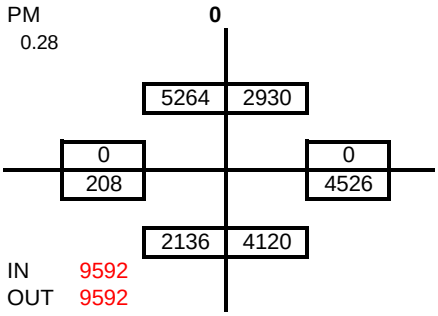
Model Base Year: **2012**

AM 0.38



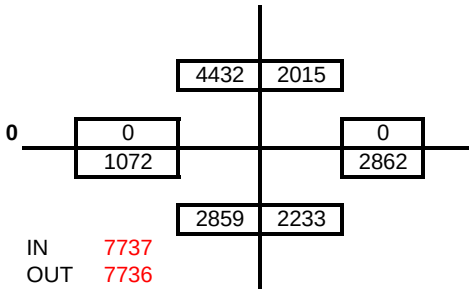
IN	5729
OUT	5729
BAL	0

PM 0.28

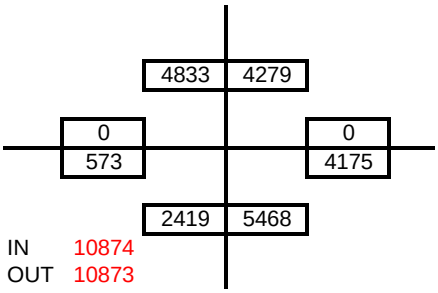


IN	9592
OUT	9592
BAL	0

Model Build-out Year: **2040** **Build-out**

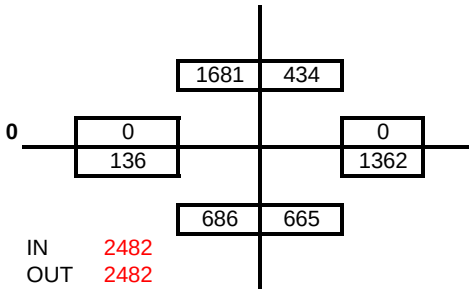


IN	7737
OUT	7736
BAL	-1

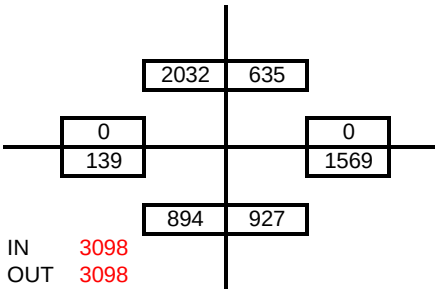


IN	10874
OUT	10873
BAL	-1

Existing Year Counts **2016**

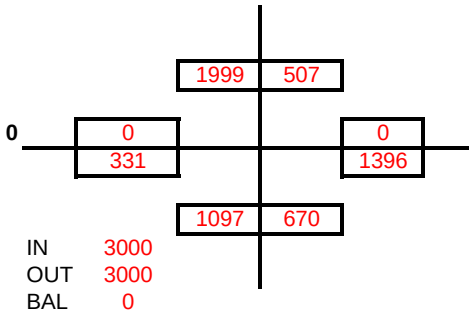


IN	2482
OUT	2482
BAL	0

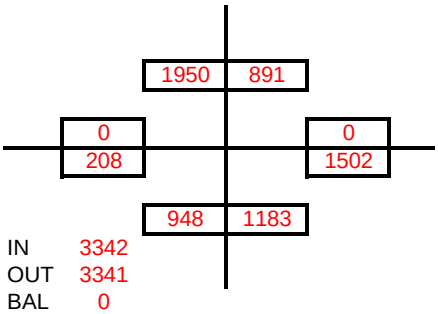


IN	3098
OUT	3098
BAL	0

Study Year Forecast **2035** **Build-out**



IN	3000
OUT	3000
BAL	0



IN	3342
OUT	3341
BAL	0

Intersection: University Pkwy I-215 SB Ramps

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH	LEFT	0	SOUTH LEG	
BOUND	THRU	374	IN ...	670
	RIGHT	291	OUT ...	1,097
SOUTH	LEFT	1067	NORTH LEG	
BOUND	THRU	614	IN ...	1,999
	RIGHT	0	OUT ...	507
EAST	LEFT	60	WEST LEG	
BOUND	THRU	4	IN ...	331
	RIGHT	72	OUT ...	0
WEST	LEFT	0	EAST LEG	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	1,396
		2,482		5,999

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH	LEFT	0	0
BOUND	THRU	374	384
	RIGHT	291	285
SOUTH	LEFT	1,067	1,102
BOUND	THRU	614	896
	RIGHT	0	0
EAST	LEFT	60	123
BOUND	THRU	4	8
	RIGHT	72	200
WEST	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
		2,482	3,000

Intersection: University Pkwy I-215 SB Ramps

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH	LEFT	0	SOUTH LEG	
BOUND	THRU	564	IN ...	1,183
	RIGHT	363	OUT ...	948
SOUTH	LEFT	1,203	NORTH LEG	
BOUND	THRU	829	IN ...	1,950
	RIGHT	0	OUT ...	891
EAST	LEFT	71	WEST LEG	
BOUND	THRU	3	IN ...	208
	RIGHT	65	OUT ...	0
WEST	LEFT	0	EAST LEG	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	1,502
		3,098		6,683

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

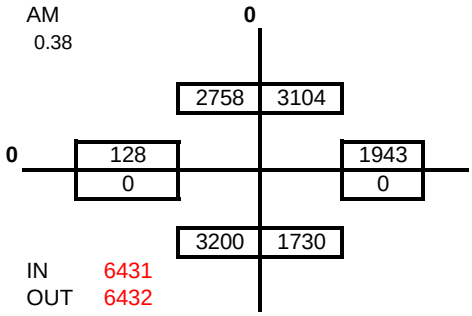
APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH	LEFT	0	0
BOUND	THRU	564	780
	RIGHT	363	404
SOUTH	LEFT	1,203	1,095
BOUND	THRU	829	855
	RIGHT	0	0
EAST	LEFT	71	112
BOUND	THRU	3	4
	RIGHT	65	93
WEST	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
		3,098	3,341

Project:	IPT Distribution Center II	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	8	**Total Difference**	28
		Existing Year Counts	2016
North/South Street	University Pkwy	**Difference Ex to B-O**	24
		Percent	0.86
East/West Street	I-215 NB Ramps	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	19

Date: 04/20/16

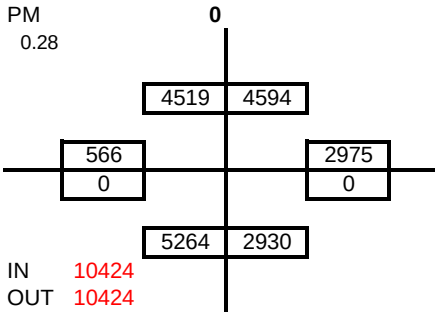
Model Base Year: **2012**

AM 0.38



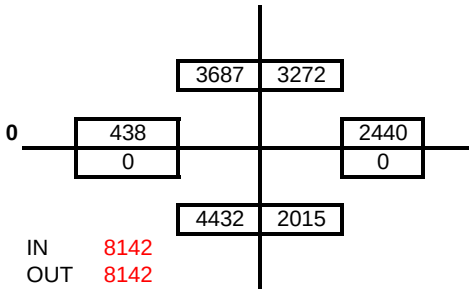
IN 6431
OUT 6432
BAL 1

PM 0.28

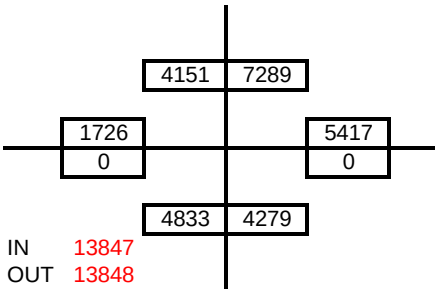


IN 10424
OUT 10424
BAL 0

Model Build-out Year: **2040** **Build-out**

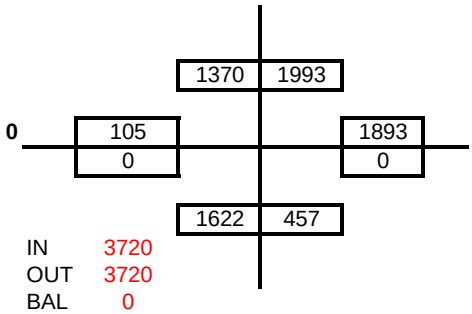


IN 8142
OUT 8142
BAL 0

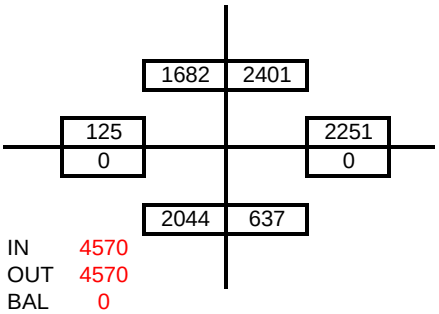


IN 13847
OUT 13848
BAL 1

Existing Year Counts **2016**

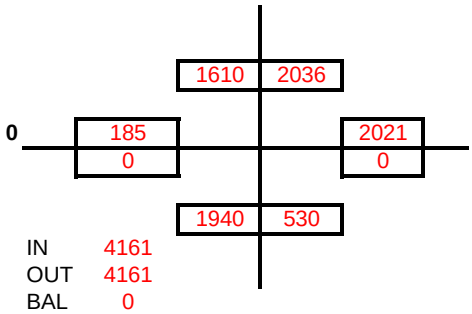


IN 3720
OUT 3720
BAL 0

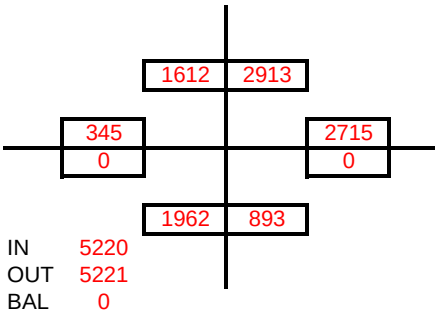


IN 4570
OUT 4570
BAL 0

Study Year Forecast **2035** **Build-out**



IN 4161
OUT 4161
BAL 0



IN 5220
OUT 5221
BAL 0

Intersection: University Pkwy I-215 NB Ramps

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH	LEFT	29	SOUTH LEG	
BOUND	THRU	428	IN ...	530
	RIGHT	0	OUT ...	1,940
SOUTH	LEFT	0	NORTH LEG	
BOUND	THRU	1299	IN ...	1,610
	RIGHT	71	OUT ...	2,036
EAST	LEFT	0	WEST LEG	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	185
WEST	LEFT	323	EAST LEG	
BOUND	THRU	5	IN ...	2,021
	RIGHT	1565	OUT ...	0
		3,720		8,322

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH	LEFT	29	60
BOUND	THRU	428	468
	RIGHT	0	0
SOUTH	LEFT	0	0
BOUND	THRU	1,299	1,501
	RIGHT	71	115
EAST	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
WEST	LEFT	323	439
BOUND	THRU	5	10
	RIGHT	1,565	1,568
		3,720	4,161

Intersection: University Pkwy I-215 NB Ramps

Condition: 2035 Build-out

Peak Hour: PM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	44	SOUTH LEG	
	THRU	593	IN ...	893
	RIGHT	0	OUT ...	1,962
SOUTH BOUND	LEFT	0	NORTH LEG	
	THRU	1,611	IN ...	1,612
	RIGHT	71	OUT ...	2,913
EAST BOUND	LEFT	0	WEST LEG	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	345
WEST BOUND	LEFT	433	EAST LEG	
	THRU	10	IN ...	2,715
	RIGHT	1,808	OUT ...	0
		4,570		10,441

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	44	146
	THRU	593	747
	RIGHT	0	0
SOUTH BOUND	LEFT	0	0
	THRU	1,611	1,445
	RIGHT	71	168
EAST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
WEST BOUND	LEFT	433	517
	THRU	10	32
	RIGHT	1,808	2,166
		4,570	5,221

Project:	IPT Distribution Center II	**Model Base Year**	2012
Condition:	Build-out	**Model Build-out Year**	2040
Intersection Number:	9	**Total Difference**	28
		Existing Year Counts	2016
North/South Street	University Pkwy	**Difference Ex to B-O**	24
		Percent	0.86
East/West Street	Kendall Dr	**Study Year Forecast**	2035 Build-out
		Difference Ex to Forecast	19

Date: 04/20/16

Model Base Year: **2012**

AM 0.38

		697	2155
0	1365		1360
	1572		906
		1712	2509

IN 6138
OUT 6138
BAL 0

PM 0.28

		1978	1685
	2090		1849
	2569		2130
		3301	2809

IN 9205
OUT 9206
BAL 1

Model Build-out Year: **2040** **Build-out**

		1358	3024
0	1378		2094
	1469		1228
		1882	2591

IN 7512
OUT 7512
BAL 0

		2827	3528
	2038		2129
	2700		3906
		2703	4519

IN 12175
OUT 12175
BAL 0

Existing Year Counts **2016**

		366	1469
0	432		592
	719		496
		683	1403

IN 3080
OUT 3080
BAL 0

		1225	1020
	875		661
	598		720
		1403	1534

IN 4018
OUT 4018
BAL 0

Study Year Forecast **2035** **Build-out**

		536	1693
0	435		781
	692		579
		727	1424

IN 3434
OUT 3434
BAL 0

		1386	1370
	865		714
	623		1057
		1289	1859

IN 4582
OUT 4582
BAL 0

Intersection: University Pkwy Kendall Dr

Condition: 2035 Build-out

Peak Hour: AM Peak Hour

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH BOUND	LEFT	92	SOUTH LEG	
	THRU	1207	IN ...	1,424
	RIGHT	104	OUT ...	727
SOUTH BOUND	LEFT	24	NORTH LEG	
	THRU	276	IN ...	536
	RIGHT	66	OUT ...	1,693
EAST BOUND	LEFT	177	WEST LEG	
	THRU	368	IN ...	692
	RIGHT	174	OUT ...	435
WEST BOUND	LEFT	233	EAST LEG	
	THRU	274	IN ...	781
	RIGHT	85	OUT ...	579
		3,080		6,869

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	92	44
	THRU	1,207	1,281
	RIGHT	104	107
SOUTH BOUND	LEFT	24	69
	THRU	276	375
	RIGHT	66	88
EAST BOUND	LEFT	177	201
	THRU	368	403
	RIGHT	174	89
WEST BOUND	LEFT	233	263
	THRU	274	304
	RIGHT	85	211
		3,080	3,434

Intersection: University Pkwy Kendall Dr

Condition: 2035 Build-out

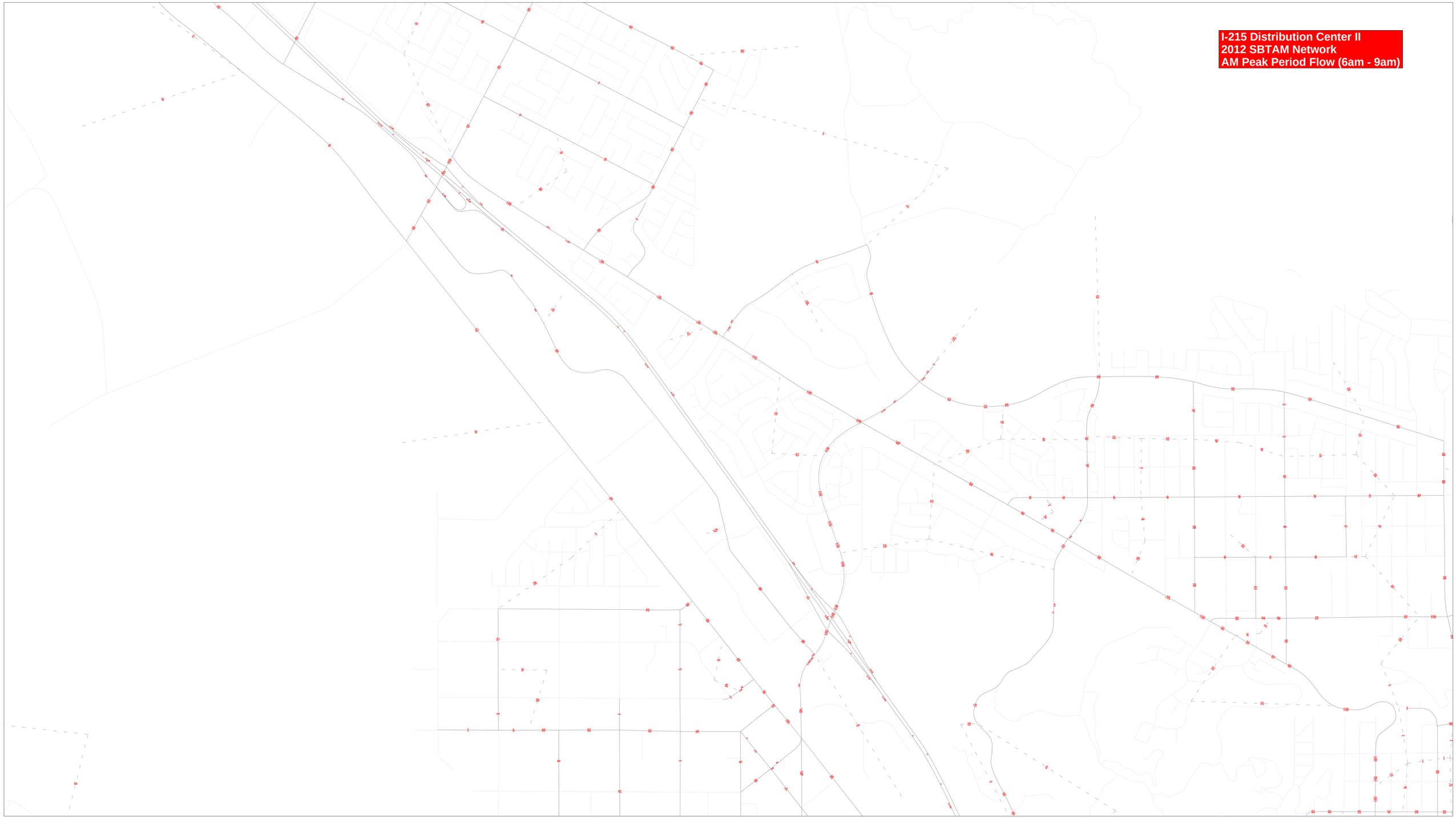
Peak Hour: PM Peak Hour

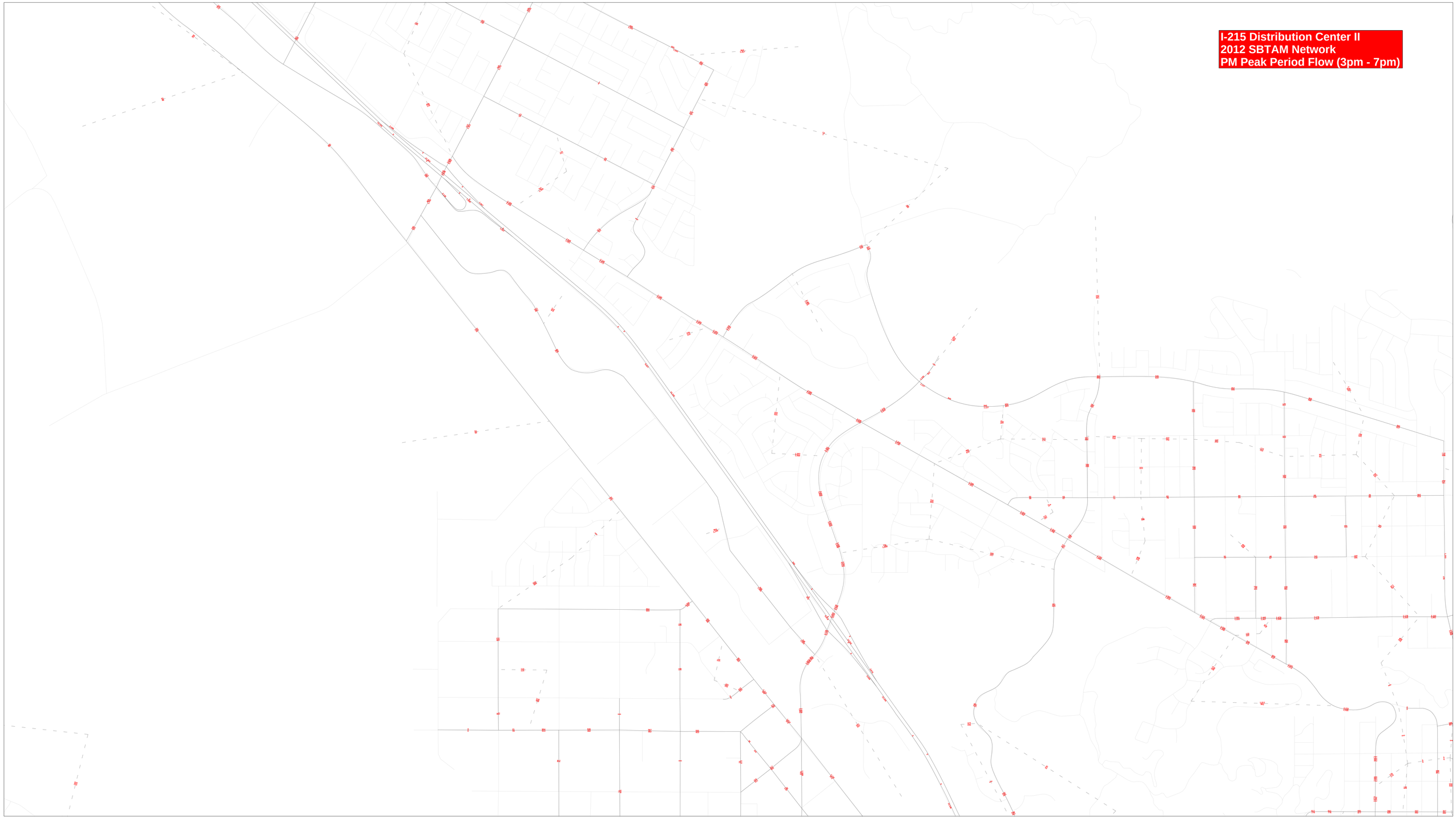
FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

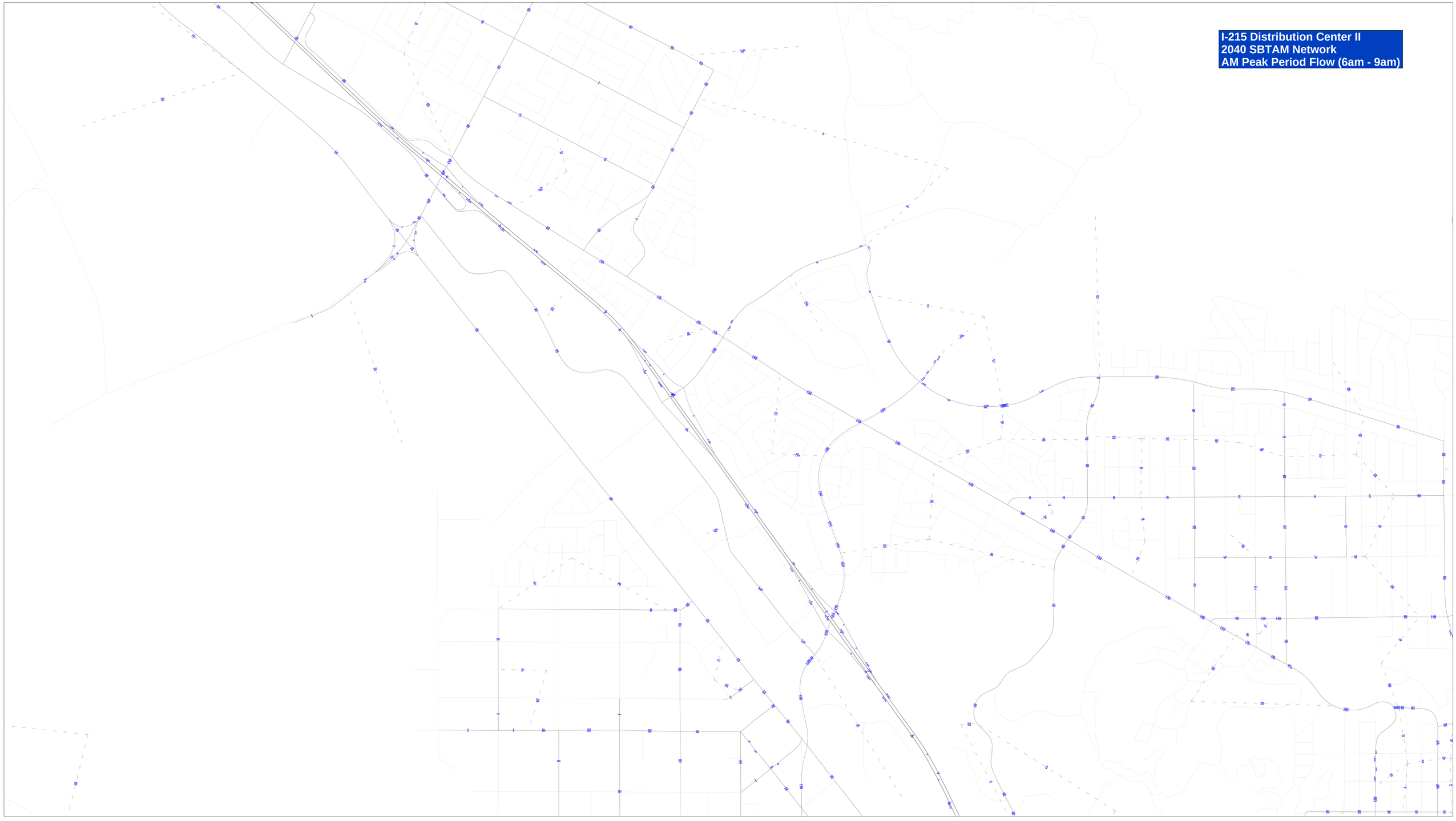
APPROACH	TURN MOVEMENT	BY COUNT	INTERSECTION LEG	FY TOTAL
NORTH	LEFT	401	SOUTH LEG	
BOUND	THRU	845	IN ...	1,859
	RIGHT	288	OUT ...	1,289
SOUTH	LEFT	101	NORTH LEG	
BOUND	THRU	1,033	IN ...	1,386
	RIGHT	91	OUT ...	1,370
EAST	LEFT	112	WEST LEG	
BOUND	THRU	331	IN ...	623
	RIGHT	155	OUT ...	865
WEST	LEFT	215	EAST LEG	
BOUND	THRU	383	IN ...	714
	RIGHT	63	OUT ...	1,057
		4,018		9,164

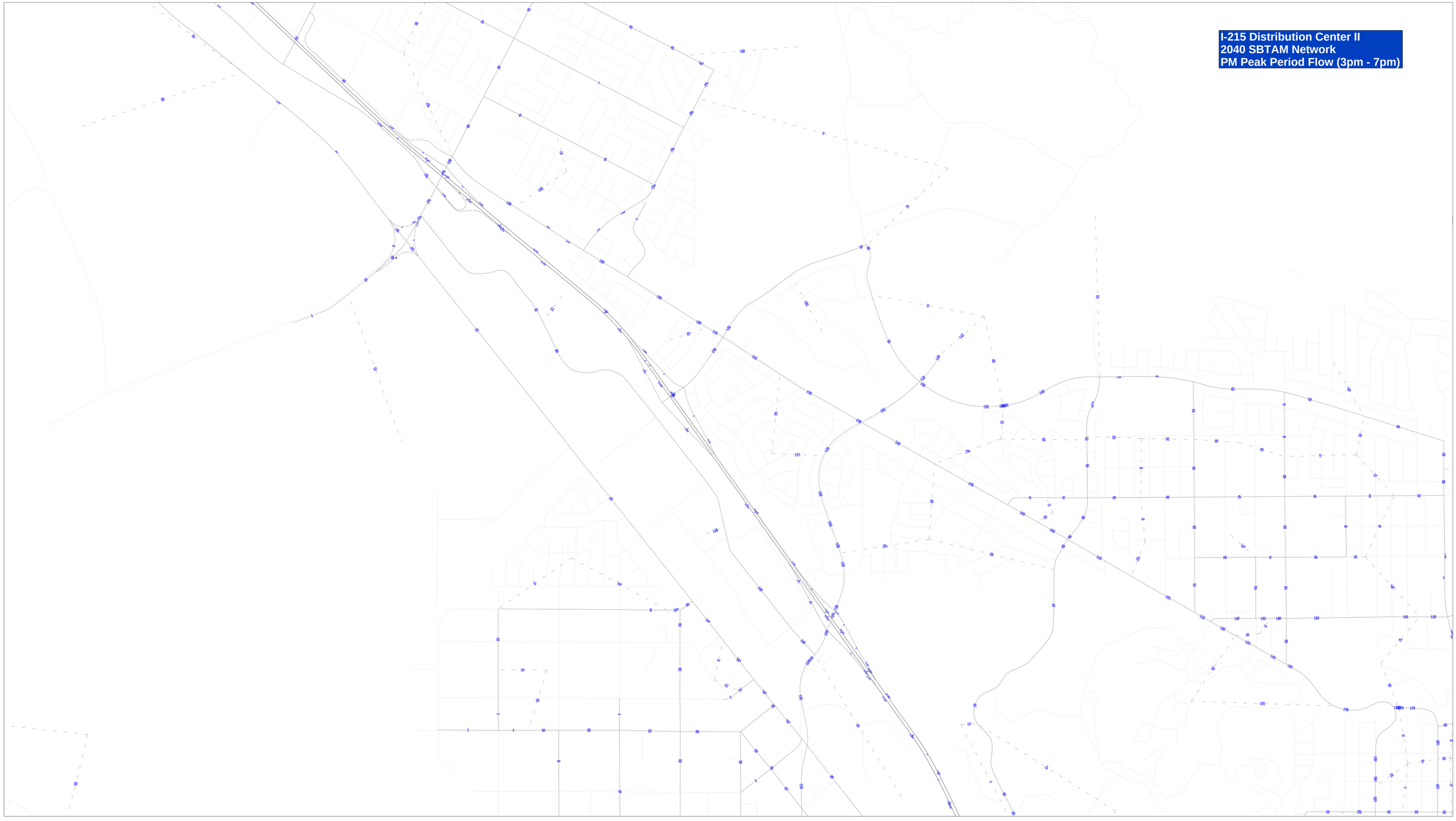
FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH	LEFT	401	326
BOUND	THRU	845	1,127
	RIGHT	288	413
SOUTH	LEFT	101	233
BOUND	THRU	1,033	1,027
	RIGHT	91	119
EAST	LEFT	112	129
BOUND	THRU	331	411
	RIGHT	155	83
WEST	LEFT	215	179
BOUND	THRU	383	421
	RIGHT	63	114
		4,018	4,582


I-215 Distribution Center II
2012 SBTAM Network
AM Peak Period Flow (6am - 9am)


I-215 Distribution Center II
2012 SBTAM Network
PM Peak Period Flow (3pm - 7pm)


I-215 Distribution Center II
2040 SBTAM Network
AM Peak Period Flow (6am - 9am)


I-215 Distribution Center II
2040 SBTAM Network
PM Peak Period Flow (3pm - 7pm)