

WATERMAN GARDENS MASTER PLAN

PUBLIC REVIEW DRAFT

VOL. 1: INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

PREPARED FOR: CITY OF SAN BERNARDINO

WATERMAN GARDENS MASTER PLAN

PUBLIC REVIEW DRAFT
VOL. 1: INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Prepared For
CITY OF SAN BERNARDINO



Prepared By
THE PLANNING CENTER | DC&E

*1917 INDIA STREET, SUITE D
SAN DIEGO, CA 92101
TEL: 619 295 6203
FAX: 619 297 2354*

**CITY OF SAN BERNARDINO
INITIAL STUDY FOR**

**PROJECT DESCRIPTION/LOCATION:
Waterman Gardens Master Plan**

DATE:

March 19, 2013

PREPARED BY

The Planning Center | DC&E
1917 India Street, Suite D
San Diego CA 92101
Contact: Brooke Peterson, AICP
(619) 295-6203

PREPARED FOR

City of San Bernardino
Community Development Department
300 North "D" Street
San Bernardino, CA 92418
(909) 384-5057

REVIEWED BY

Independently reviewed, analyzed and exercised judgment
in making the determination, by the Development/Environmental Review Committee on
_____, pursuant to Section 21082 of the California Environmental Quality Act (CEQA).

TABLE OF CONTENTS

I.	AESTHETICS.....	16
II.	AGRICULTURE AND FORESTRY RESOURCES.....	19
III.	AIR QUALITY.....	21
IV.	BIOLOGICAL RESOURCES	35
V.	CULTURAL RESOURCES	39
VI.	GEOLOGY AND SOILS.....	47
VII.	HAZARDS AND HAZARDOUS MATERIALS	56
VIII.	HYDROLOGY AND WATER QUALITY.....	64
IX.	LAND USE AND PLANNING	71
X.	MINERAL RESOURCES.....	76
XI.	NOISE.....	79
XII.	POPULATION AND HOUSING	104
XIII.	PUBLIC SERVICES	106
XIV.	RECREATION	111
XV.	TRANSPORTATION AND TRAFFIC	113
XVI.	UTILITIES AND SERVICE SYSTEMS.....	132
XVII.	GREENHOUSE GAS EMISSIONS.....	137
XVIII.	MANDATORY FINDINGS OF SIGNIFICANCE	146

List of Figures

Figure 1	Regional Location Map.....	2
Figure 2	Project Area	3
Figure 3a	Project Site Plan	5
Figure 3b	Project Phasing Plan Alternatives.....	7
Figure 4	South Coast Air Basin.....	22
Figure 5	Biological Resource Areas.....	37
Figure 6	Archeological Sensitivities	41
Figure 7	Potential Subsidence Areas	49
Figure 8	Liquefaction Susceptibility.....	50
Figure 9	San Bernardino International Airport Planning Boundaries.....	58
Figure 10	Fire Hazard Areas	59
Figure 11	100 Year Flood Plain.....	66
Figure 12	Seven Oaks Dam Inundation.....	67
Figure 13	General Plan Land Use Map	72
Figure 14	Mineral Resource Zones	77
Figure 15	Existing Roadway Noise Levels.....	82
Figure 16	Future (2013) Roadway Noise Contours – Without Project	91
Figure 17	Future (2013) Roadway Noise Contours – With Project.....	92
Figure 18	Cumulative Future (2030) Roadway Noise Contours – Without Project	93
Figure 19	Cumulative Future (2030) Roadway Noise Contours – With Project.....	94
Figure 20	Project Location and Study Intersections.....	115
Figure 21	Existing Lane Configurations and Peak Hour Traffic Volumes	117
Figure 22	Pending and Approved Projects	119
Figure 23	Opening Year (2013) plus Project Condition Volumes and Lane Configurations and Peak Hour Traffic Volumes	122
Figure 24	Future Buildout Year (2033) Plus Project Lane Configurations and Peak Hour Traffic Volumes	125
Figure 25	Traffic Mitigation Measures.....	128

List of Tables

Table 1	Attainment Status – South Coast Air Basin (San Bernardino County Portion).....	23
Table 2	Ambient Air Pollutant Concentrations	25
Table 3	Estimated Construction Emissions.....	27
Table 4	Estimated Operational Emissions.....	28
Table 5	Comparison of Vehicle Miles Traveled to Population (2022).....	29
Table 6	Localized Significance Thresholds Analysis	31
Table 7	Maximum Carbon Monoxide Concentrations.....	32
Table 8	Summary of Existing Noise Levels Near the Project Site	83
Table 9	Estimated Unmitigated Construction Noise Levels.....	86
Table 10	Summary of Future Opening Year (2013) Noise Levels Near the Project Site.....	88
Table 11	Summary of Future Buildout Year (2030) Noise Levels Near the Project Site.....	95
Table 12	Summary of Future 2030 Noise Levels for Select On-Site Project Residents	97
Table 13	Summary of Future (2030) Mitigated Noise Levels for On-Site Project Residents along Baseline Street	100
Table 14	Intersection Levels of Service: Existing Conditions	116
Table 15	Intersection Levels of Service: Opening Year (2013) No Project.....	121
Table 16	Project Trip Generation	121
Table 17	Intersection Levels of Service: Opening Year (2013) Plus Project	123
Table 18	Impacts for Signalized Intersections: Opening Year (2013) Plus Project	123
Table 19	Intersection Levels of Service: Opening Year (2013) Plus Project	124
Table 20	Intersection Levels of Service: Future Buildout Year (2033) Plus Project.....	126
Table 21	Impacts for Signalized Intersections: Future Buildout Year (2033) Plus Project.....	126
Table 22	GHG Emissions in California	138
Table 23	Estimated Construction Greenhouse Gas Emissions	141
Table 24	Estimated Operational Greenhouse Gas Emissions	143
Table 25	Mitigated Operational Greenhouse Gas Emissions.....	144

INITIAL STUDY CHECKLIST

1. **Project Title:** Waterman Gardens Master Plan
2. **Lead Agency Name and Address:**
City of San Bernardino
300 North “D” Street
San Bernardino, CA 92418
3. **Contact Person and Phone Number:**
Aron Liang, Senior Planner
909-384-5057
4. **Project Location:** The proposed project is located within the City of San Bernardino, shown on a regional map in Figure 1. The project site, shown in Figure 2, is located at the southeastern corner of Baseline Street and N. Waterman Avenue and stretches from north-south from Baseline Street to Olive Street, and east-west from La Junita Street to N. Waterman Avenue. N. Waterman Avenue and Baseline Street are both major arterials that connect the site to Interstates 210 and 215.
5. **Project Sponsor’s Name and Address:**
Housing Authority of the County of San Bernardino
715 East Brier Drive
San Bernardino, CA 92408
6. **General Plan Land Use Designation:** Residential Medium (RM)
7. **Description of Project:** The proposed project, shown in Figure 3, would demolish the existing 252-residential unit Waterman Gardens Public Housing project on 38 acres at the southeast corner of the intersection of N. Waterman Avenue and Baseline Street in the City of San Bernardino and construct new residential units, a community center, and other community service-oriented uses at the same location. The new structures would include up to 411 new dwelling units including 337 apartment and townhouse units with a mix of one-to-four bedrooms and 73 affordable senior housing units. Specifically, the project would include 73 senior citizen residential units, and 57 one-bedroom units, 137 two-bedroom units, 133 three-bedroom units, and 11 four-bedroom units. The overall residential density of the site would be 10.8 dwelling units per acre. In addition to the new dwelling units, the project would include a 45,800-square-foot Recreational Center, 58,200-square-foot Community Center, 7,400-square-foot Administration Building, and 18,400-square-foot (re-habilitated) Existing Central Shop, Maintenance Building, Recycling yard and Community Garden Building. A Conditional Use Permit would be required for the Density Bonus Agreement, Day Care Center, Social Service Uses/Recreation Center, and Development Plan.

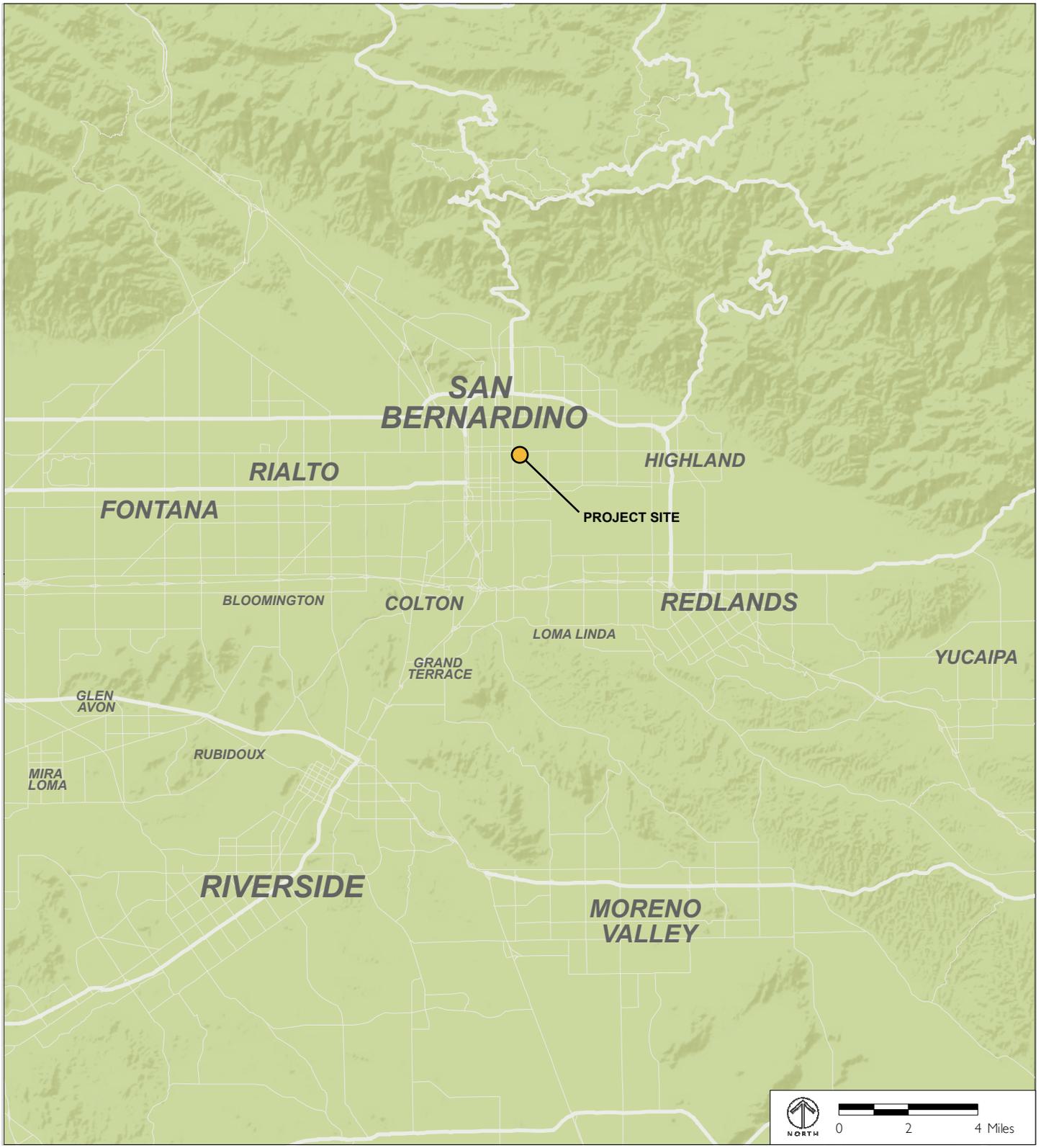


FIGURE 1
REGIONAL LOCATION MAP

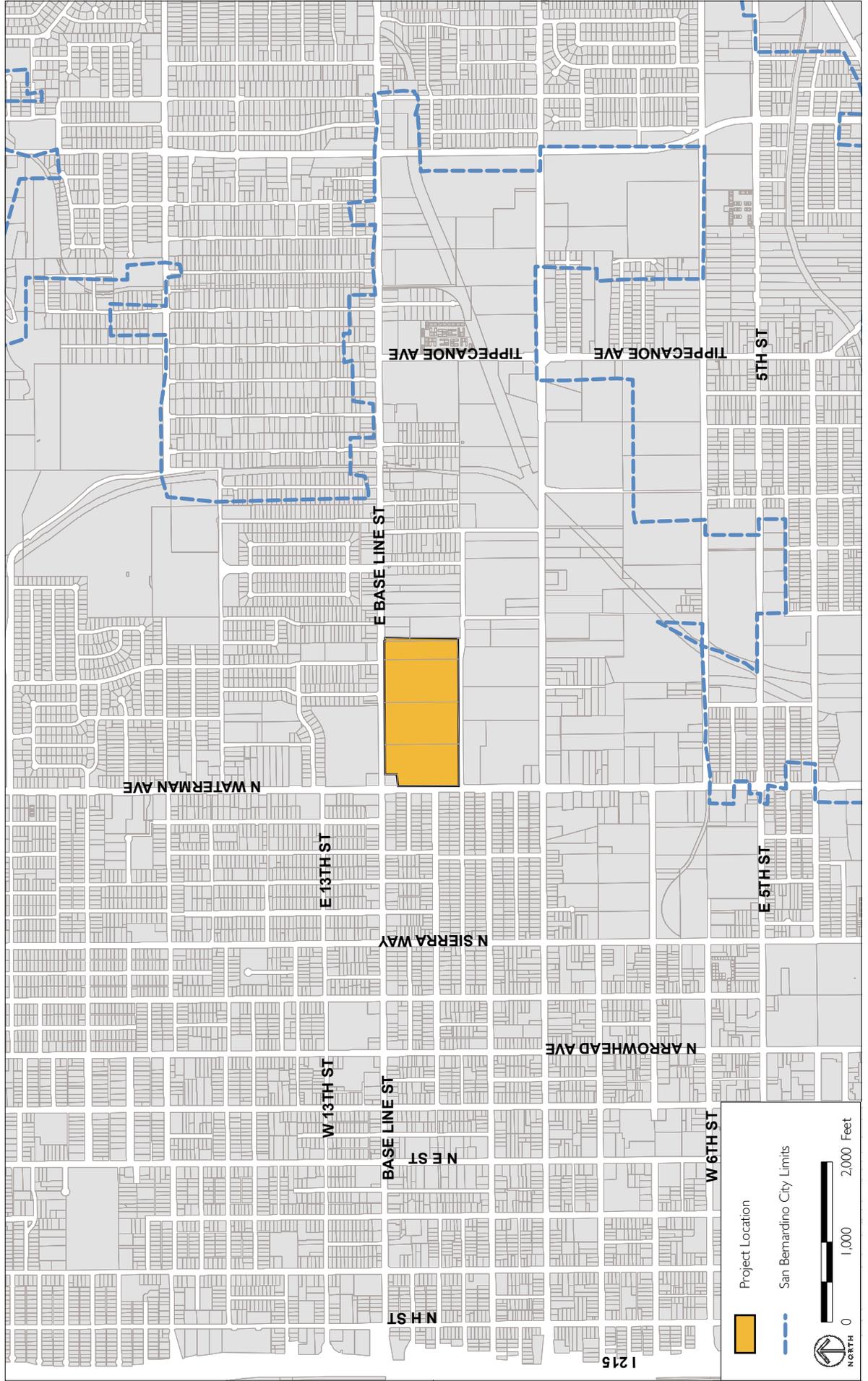


FIGURE 2
PROJECT AREA

The project will be subdivided into nine separate parcels as follows:

- ◆ Parcel 1: Residential buildings (38 dwelling units, 2.54 acres, 14.96 du/ac)
- ◆ Parcel 2: Community and Recreational Centers (0 dwelling units, 5.12 acres)
- ◆ Parcel 3: Senior Housing Buildings (73 dwelling units, 4.12 acres, 17.96 du/ac)
- ◆ Parcel 4: Existing Central Shop, Maintenance Building, Recycling Yard, and Community Garden Building (0 dwelling units, 1.67 acres)
- ◆ Parcel 5: Administration Building (0 dwelling units, 0.54 acres)
- ◆ Parcel 6: Residential buildings (75 units, 5.64 acres, 13.30 du/ac)
- ◆ Parcel 7: Residential Buildings (76 dwelling units, 5.15 acres, 14.76 du/ac)
- ◆ Parcel 8: Residential Buildings (79 dwelling units, 5.76 acres, 13.72 du/ac)
- ◆ Parcel 9: Residential Buildings (69 units, 6.40 acres, 10.78 du/ac)

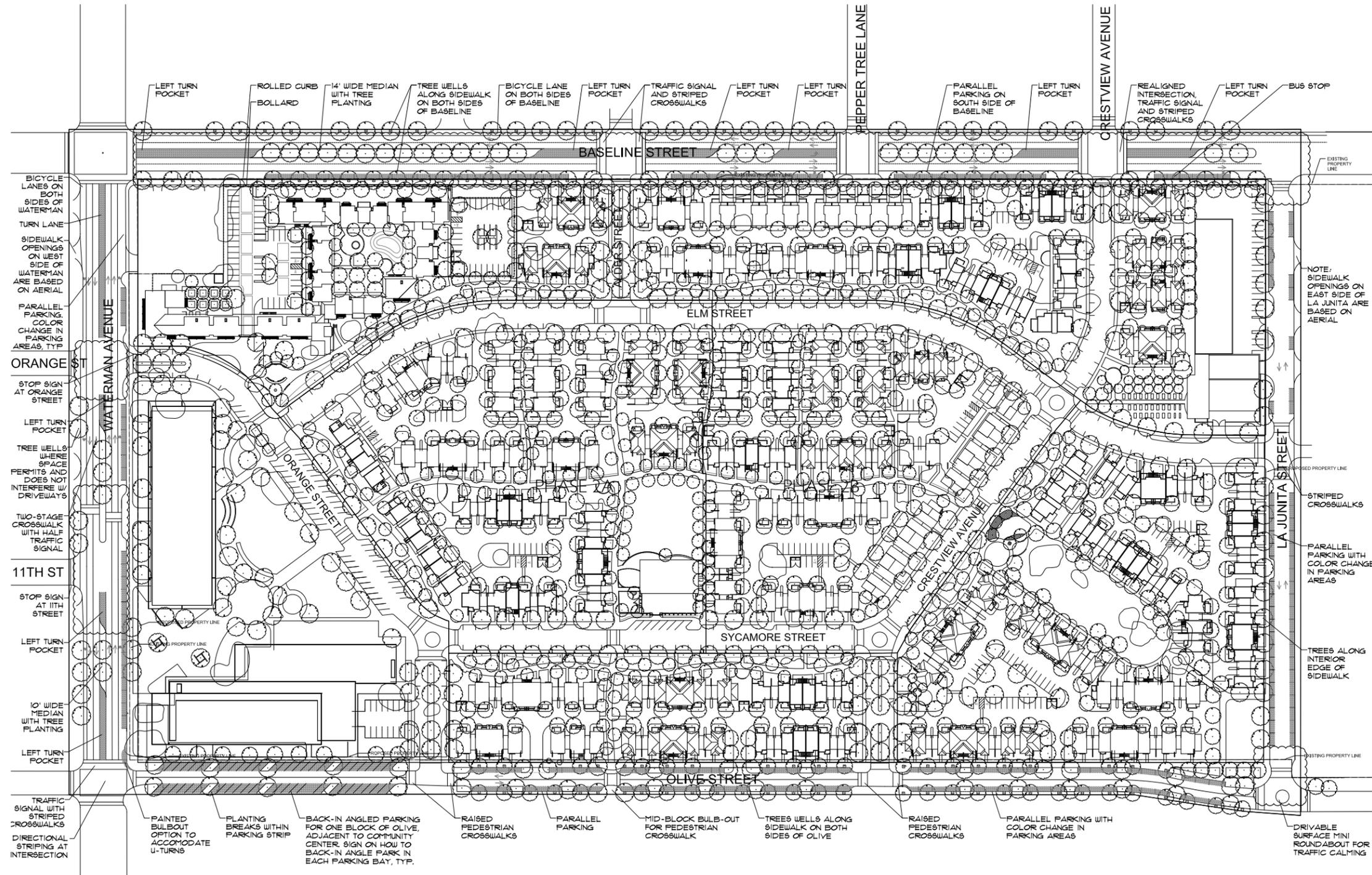
The structures would have variable setbacks from N. Waterman Avenue, Baseline Street, La Junita Street, and Olive Street. There would be six vehicular access points to and from the project site: two along Olive Street located towards the west and east end respectively; one located mid-block on La Junita Street, two along Baseline Street located mid-block and towards the east end respectively; and one located mid-block at Orange Street along N. Waterman Avenue. Additional pedestrian and bicycle access would be located throughout the project and traffic calming measures would be implemented on N. Waterman Avenue, Baseline Street, and Olive Street. The proposed project would include many on-site recreation amenities, including the 45,800-square-foot recreational facility and natatorium, pedestrian-only greenways, walking paths, and three neighborhood parks with playing fields and picnic areas. A total of 1,070 spaces would be provided on site, including 898 off-street parking spaces and 172 on-street parking spaces.

Based on the 2010 U.S. Census 2010 data, the project site currently houses 844 people, which is equivalent to 3.35 persons per dwelling unit. Using this same population density, the proposed project would have a population of 1,377 or an increase of 533 persons. Since the proposed project will result in the demolition of existing residential structures, these residents will need to be relocated. As described in the Relocation Plan, provided in Appendix L, sufficient replacement housing is available in the area surrounding the project site to house all displaced residents of Waterman Gardens. The Housing Authority of the County of San Bernardino (HACSB) will provide relocation assistance and other services as described in the Relocation Plan.

There are three phasing alternatives proposed for the project. The land owner shall submit the final proposed phasing plan prior to issuance of first building permit.

Under **Phasing-Option A**, the project would be phased as follows:

- ◆ **Phase-1A** would include demolition of existing structures in the southwest corner of the property and construction of the Recreation Center and Community Center. A total of 50 dwelling units would be removed during this phase.
- ◆ **Phase-1B** would include the improvements to the public roadway surrounding the project site including the traffic calming measures traffic signals along the western portion of Olive Street.

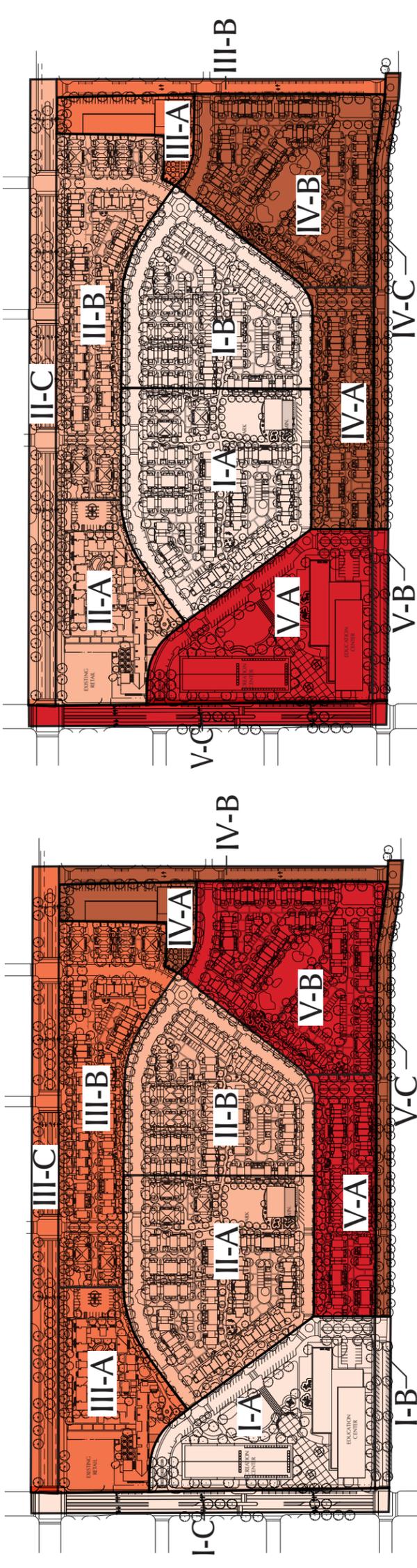


1" = 60'-0"
 NORTH

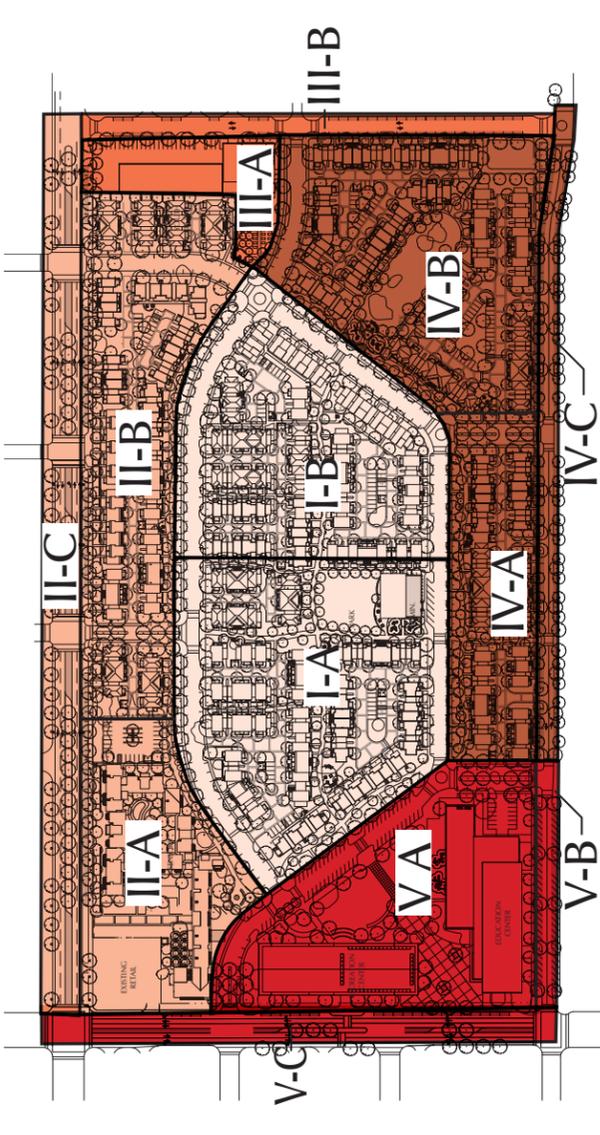
Source: Pyatok Architects, 2012.

FIGURE 3A
 PROJECT SITE PLAN

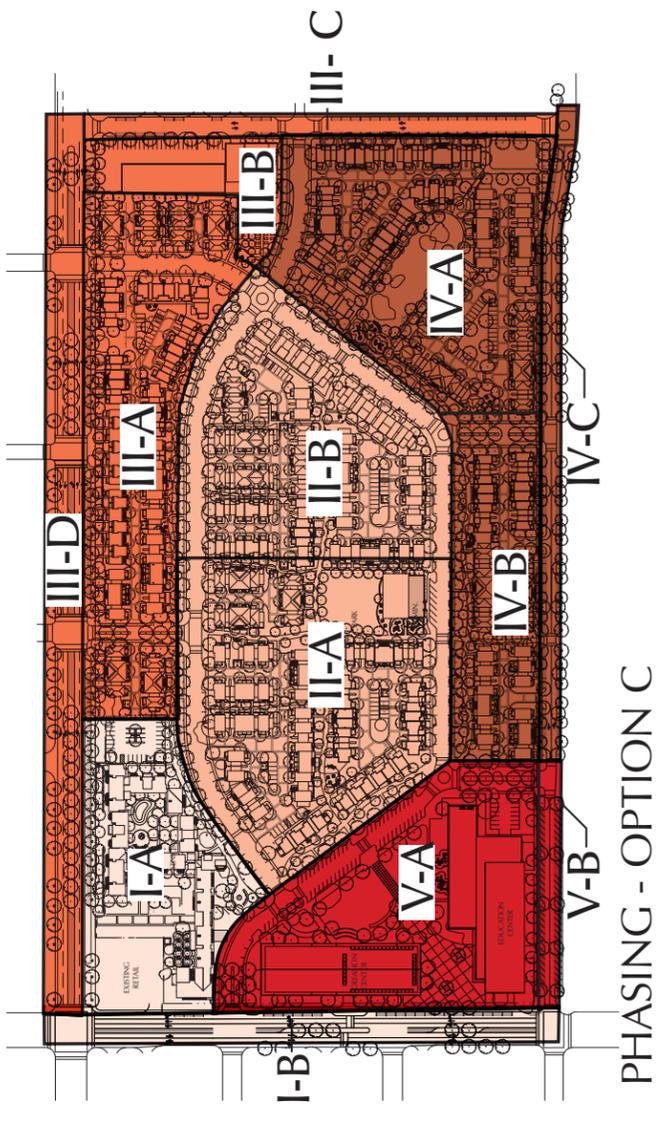
Back of 11 x 17



PHASING - OPTION A



PHASING - OPTION B



PHASING - OPTION C



Source: Pyatok Architects, 2012.

- ◆ **Phase-1C** would include the improvements to the public roadway surrounding the project site including the traffic calming measures including center medians and traffic signals along Waterman Avenue.
- ◆ **Phase-2A** would include demolition of existing structures and construction of new structures in the interior of the site. A total of 38 units would be removed and 75 units and the Administration Building would be created during this phase.
- ◆ **Phase-2B** would include demolition of existing structures and construction of new structures in the interior of the site. A total of 38 units would be removed and 76 units would be created during this phase.
- ◆ **Phase-3A** would include demolition of existing structures and construction of new structures in the northwest corner of the site. A total of 18 units would be removed and 73 units would be created during this phase.
- ◆ **Phase-3B** would include demolition of existing structures and construction of new structures in the northeast portion of the site. A total of 48 units would be removed and 79 units would be created during this phase.
- ◆ **Phase-3C** would include the improvements to the public roadway adjacent the project site including the traffic calming measures including center medians and traffic signals along Baseline Street.
- ◆ **Phase-4A** would include rehabilitation of the Existing Central Shop, Maintenance Building, Recycling Yard, and Community Garden Building during this phase.
- ◆ **Phase-4B** would include the improvements to the public roadway surrounding the project site including the traffic calming measures including traffic signals along La Junita Street.
- ◆ **Phase-5A** would include demolition of existing structures and construction of new structures along the south edge of the site along Olive Street. A total of 14 units would be removed and 38 units would be created during this phase.
- ◆ **Phase-5B** would include demolition of existing structures and construction of new structures in the southeast corner of the site. A total of 40 units would be removed and 69 units would be created during this phase.
- ◆ **Phase-5C** would include the improvements to the public roadway adjacent the project site including traffic calming measures including traffic signals along the eastern portion of Olive Street.

Under **Phasing-Option B**, the project would be phased as follows:

- ◆ **Phase-1A** would include demolition of existing structures and construction of new structures in the interior of the site. A total of 38 units would be removed and 75 units and the Administration Building would be created during this phase.
- ◆ **Phase-1B** would include demolition of existing structures and construction of new structures in the interior of the site. A total of 38 units would be removed and 76 units would be created during this phase.

- ◆ **Phase-2A** would include demolition of existing structures and construction of new structures in the northwest corner of the site. A total of 18 units would be removed and 73 units would be created during this phase.
- ◆ **Phase-2B** would include demolition of existing structures and construction of new structures in the northeast portion of the site. A total of 48 units would be removed and 79 units would be created during this phase.
- ◆ **Phase-2C** would include the improvements to the public roadway adjacent the project site including the traffic calming measures including center medians and traffic signals along Baseline Street.
- ◆ **Phase-3A** would include rehabilitation of the Existing Central Shop, Maintenance Building, Recycling Yard, and Community Garden Building during this phase.
- ◆ **Phase-3B** would include the improvements to the public roadway surrounding the project site including the traffic calming measures including traffic signals along La Junita Street.
- ◆ **Phase-4A** would include demolition of existing structures and construction of new structures along the south edge of the site along Olive Street. A total of 14 units would be removed and 38 units would be created during this phase.
- ◆ **Phase-4B** would include demolition of existing structures and construction of new structures in the southeast corner of the site. A total of 40 units would be removed and 69 units would be created during this phase.
- ◆ **Phase-4C** would include the improvements to the public roadway adjacent the project site including traffic calming measures including traffic signals along the eastern portion of Olive Street.
- ◆ **Phase-5A** would include demolition of existing structures in the southwest corner of the property and construction of the Recreation Center and Community Center. A total of 50 dwelling units would be removed during this phase.
- ◆ **Phase-5B** would include the improvements to the public roadway surrounding the project site including the traffic calming measures including traffic signals along the western portion of Olive Street.
- ◆ **Phase-5C** would include the improvements to the public roadway surrounding the project site including the traffic calming measures including center medians and traffic signals along Waterman Avenue.

Under **Phasing-Option C**, the project would be phased as follows:

- ◆ **Phase-1A** would include demolition of existing structures and construction of new structures in the northwest corner of the site. A total of 18 units would be removed and 73 units would be created during this phase.
- ◆ **Phase-1B** would include the improvements to the public roadway surrounding the project site including the traffic calming measures including center medians and traffic signals along Waterman Avenue.

- ◆ **Phase-2A** would include demolition of existing structures and construction of new structures in the interior of the site. A total of 38 units would be removed and 75 units and the Administration Building would be created during this phase.
- ◆ **Phase-2B** would include demolition of existing structures and construction of new structures in the interior of the site. A total of 38 units would be removed and 76 units would be created during this phase.
- ◆ **Phase-3A** would include demolition of existing structures and construction of new structures in the northeast portion of the site. A total of 48 units would be removed and 79 units would be created during this phase.
- ◆ **Phase-3B** would include rehabilitation of the Existing Central Shop, Maintenance Building, Recycling Yard, and Community Garden Building during this phase.
- ◆ **Phase-3C** would include the improvements to the public roadway surrounding the project site including the traffic calming measures including center medians and traffic signals along La Junita Street.
- ◆ **Phase-3D** would include the improvements to the public roadway adjacent the project site including the traffic calming measures including center medians and traffic signals along Baseline Street.
- ◆ **Phase-4A** would include demolition of existing structures and construction of new structures in the southeast corner of the site. A total of 40 units would be removed and 69 units would be created during this phase.
- ◆ **Phase-4B** would include demolition of existing structures and construction of new structures along the south edge of the site along Olive Street. A total of 14 units would be removed and 38 units would be created during this phase.
- ◆ **Phase-4C** would include the improvements to the public roadway adjacent the project site including traffic calming measures including traffic signals along the eastern portion of Olive Street.
- ◆ **Phase-5A** would include demolition of existing structures in the southwest corner of the property and construction of the Recreation Center and Community Center. A total of 50 dwelling units would be removed during this phase.
- ◆ **Phase-5B** would include the improvements to the public roadway surrounding the project site including the traffic calming measures including traffic signals along the western portion of Olive Street.

Based on available funding, Phase 1 of the final phasing plan would begin in 2013 and last approximately two years. Phase 2 would begin in 2015 and last approximately three to four years. Phase 3 would begin in 2018 and last approximately two to three years. Phase 4 would begin in 2020 and last just over two years. Phase 5 would begin in 2022 and last just over two years. The existing project site is currently developed; therefore, demolition activity would occur during the start of each construction phase. The phases would overlap to some extent such that demo-

lition for the upcoming phase would occur during the final months of construction from the preceding phase.

8. **Surrounding Land Uses and Setting:** Surrounding land uses include a mix of commercial and light industrial uses including retail, fast food restaurants, a full scale grocer, and medical facilities. Primarily small commercial and light industrial businesses border N. Waterman Avenue on its western side north and south of the project and on its eastern side north of the project. A larger regional commercial center is located along N. Waterman Avenue one block south of the project site. Similar business also border Baseline Street on its northern side north of the project. A large grocer is located on the north side of Baseline Street immediately north of the project. Single-family residences are located further beyond the commercial areas along collector streets.
9. **City Approvals Required:**
 - ◆ Tentative Tract Map No. 18829
 - ◆ Conditional Use Permit (Density Bonus Agreement, Day Care Center, Social Service Uses/Recreation Center, Development Plan)
 - ◆ Development Agreement No. 12-02
10. **Other Public Agencies Whose Approval is Required:**
 - ◆ California Office of Historic Preservation
 - ◆ California Regional Water Quality Control Board, Santa Ana Region
 - Storm Water Pollution Prevention Plan (SWPPP) (TBD)
 - National Pollutant Discharge Elimination System (NPDES) Permit (TBD)
 - ◆ U.S. Department of Housing and Urban Development
 - NEPA Environmental Assessment

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.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture & Forestry Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input checked="" type="checkbox"/> Geology & Soils |
| <input checked="" type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology & Water Quality |
| <input type="checkbox"/> Land Use | <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Noise |
| <input type="checkbox"/> Population & Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input checked="" type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Utilities & Service Systems | <input type="checkbox"/> Mandatory Findings of Significance |

Determination:

On the basis of this initial 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.
- I 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.

Aron Liang
Signature:

March 19, 2013
Date:

Aron Liang
Printed Name:

City of San Bernardino
For:

ENVIRONMENTAL CHECKLIST AND FINDINGS

A. Discussion of Environmental Evaluation

Items identified in each section of the environmental checklist below are discussed following that section. Required mitigation measures are identified (if applicable) where necessary to reduce a projected impact to a level that is determined to be less than significant.

B. Sources

The City of San Bernardino General Plan Update and Associated Specific Plans Environmental Impact Report (State Clearinghouse Number 2004111132) is herein incorporated by reference in accordance with Section 15150 of the CEQA Guidelines. Pursuant to Section 15152 of the California Environmental Quality Act (CEQA) Guidelines, this Initial Study is tiered from the City of San Bernardino General Plan Update and Associated Specific Plans Environmental Impact Report (General Plan EIR) (State Clearinghouse Number 2004111132). Copies of this document and all other documents referenced herein are available for review at the City of San Bernardino Development Service Department, 300 North D Street, San Bernardino, CA, or are available online. This includes the following documents:

1. City of San Bernardino General Plan, 2005
2. City of San Bernardino General Plan Update and Associated Specific Plans Environmental Impact Report, 2005
3. City of San Bernardino Municipal Code
4. City of San Bernardino Development Code (Title 19 of the San Bernardino Municipal Code)
5. City of San Bernardino Historic Resources Reconnaissance Survey
6. Site Visits and Analysis
7. State of California Hazardous Waste & Substances List
8. California Building Code
9. Uniform Fire Code
10. Alquist-Priolo Earthquake Fault Zones Map
11. South Coast Air Quality Management District, CEQA Air Quality Handbook, 1993
12. Federal Emergency Management Agency, Flood Insurance Rate Maps, 2008
13. Public Works Standard Requirements – Water
14. Public Works Standard Requirements – Grading
15. C.H.J., Inc., Engineering Geology Investigation for Proposed Redevelopment of Waterman Gardens Project, 2010
16. LSA Associates, Inc., Phase I Environmental Assessment, 2010
17. Fehr & Peers, Waterman Gardens Master Plan Traffic Impact Analysis, 2012
18. Impact Sciences, Waterman Gardens Master Plan Project Air Quality Assessment, 2011
19. Impact Sciences, Inc., Waterman Gardens Master Plan Project Greenhouse Gas Assessment, 2011
20. Impact Sciences, Inc., Waterman Gardens Master Plan Project Noise Assessment, 2011
21. Cogstone Resource Management, Inc., Archeological Assessment Literature Study for the Waterman Gardens Redevelopment Project, 2011

22. Cogstone Resource Management, Inc., Historic Resource Evaluation of Waterman Gardens Public Housing Complex, 2011
23. Dan Guerra & Associates, Preliminary Drainage Report Waterman Gardens, 2011
24. Dan Guerra & Associates, Water Quality Management Plan for Waterman Gardens, 2011
25. Hyphae Design Laboratory, Wastewater Management and Flow Analysis Report, 2011
26. Overland, Pacific & Cutler, Inc., Relocation Plan for Waterman Gardens Revitalization, 2011

I. AESTHETICS		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
Would the project:					
a) Have a substantial adverse effect on a scenic vista as identified in the City's General Plan?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character of quality of the site and its surroundings?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime view in the area?		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Other:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

The project site is located in an urbanized, extensively developed area near the center of the City of San Bernardino and does not contain any existing scenic resources. The scenic vistas within the City are primarily associated with views of the San Bernardino Mountains to the north and vegetation associated with the Santa Ana River and its tributaries to the south and east. According to the City's General Plan EIR, the project site is not located within a scenic vista view corridor.¹ Although the City does not contain any officially designated State of California scenic highways, State Route (SR) 18, which travels through the San Bernardino Mountains², and portions of SR-30, south of SR-330, and SR-330 that pass through the City are designated as Eligible Scenic Highways. As Eligible Scenic Highways, the provisions of the California Scenic Highways program apply to these sections of the roadways in the City.³

The proposed project site is approximately 38 acres and comprises the San Bernardino Waterman Gardens Public Housing, built in 1943, which includes 252 family units in 114 buildings which include 87 single-story duplexes, 24 multi-family townhouses, a management office building, Head Start facility, and maintenance facility. Existing buildings range from approximately 11 feet to a maximum of 20 feet in height. There are currently just under 500 trees on the site, many of which are in poor health and/or are a hazard and need to be removed. The site is surrounded by urbanized development on all sides, with the exception of an orange grove immediately east of the project site.

Existing street lighting is present within the right-of-way along Waterman Avenue and Baseline Street and within the project site. The existing street lighting within the site uses "cobra-head" lights mounted on poles at a height of approximately 30 feet. The street lighting is bright at intersections and below the poles, but because of the wide pole spacing the lighting is very uneven, dropping off to virtually zero between poles. Where mature trees are located near street lights, the shadowed areas below the trees are very dark. In large open areas, "shoebox" area lights on approximately 30-foot poles pro-

¹ City of San Bernardino, 2005, *General Plan Update and Associated Specific Plans EIR*, page 5.1-8.

² City of San Bernardino, 2005, *General Plan Update and Associated Specific Plans EIR*, page 5.1-8.

³ City of San Bernardino, 2005, *General Plan*, page 6-7.

vide light near the poles, but the surrounding areas are very dark. Wall-mounted low-wattage fluorescent lights provide some light between the buildings, but because the spaces between buildings are wide and the lights are mounted very low, there is very little light on the lawns.

Discussion

a) Would the project have a substantial adverse effect on a scenic vista as identified in the City's General Plan?

The scenic vistas within the City are primarily associated with views of the San Bernardino Mountains to the north and vegetation associated with the Santa Ana River and its tributaries to the south and east. According to the City's General Plan EIR, the project site is not located within a scenic vista view corridor nor does it contain existing scenic resources. Therefore, no impacts are anticipated. *(No Impact)*

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

As described in the existing conditions, there are no designated State scenic highways located within the City of San Bernardino or sphere of influence (SOI) areas. However SR-18, which travels through the San Bernardino Mountains, and portions of SR-30, south of SR-330, and SR-330 that pass through the City are designated as Eligible Scenic Highways. The project would not alter or damage any scenic resources within SR-18, SR-30, SR-330, or any other State scenic highway. Therefore, no impacts are anticipated. *(No Impact)*

c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

As described in existing conditions, the project site is currently developed with non-descript one- and two-story Federally-Subsidized Public Housing buildings and related structures. The project would replace the existing development with new townhomes and apartments, senior housing, related structures, community and recreational facilities, and open space, parks and landscaping. The selective removal of some of the existing trees would modify the character of the site; however the proposed landscaping would enhance the site with significant amounts of additional vegetation and would include climate-appropriate plantings. The site is surrounded by urbanized development on all sides, with the exception of an orange grove immediately east of the project site. Given the location of the site and existing surrounding development, the proposed project would not degrade the existing visual character of the site or its surroundings. Therefore, no impacts are anticipated. *(No Impact)*

d) Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

The proposed 411-unit residential development would create new light in the area. However, since there is existing street lighting in the right-of-way along Waterman Avenue and Baseline Street and lighting within the project site, as described in existing conditions above, the proposed project would not significantly increase the amount of light/glare currently generated in the area.

The proposed lighting will use LED lights on medium-height poles to produce even illumination that is not blocked by trees. All light will be directed downward to avoid unwanted “sky glow” light pollution. Along streets and parking areas, the poles will be approximately 20-feet tall; along pedestrian greenways and in alleys, the poles will be approximately 14-feet tall. Where poles are located near residences, the lights will be shielded to reduce unwanted light spill into the units. Ceiling lights at porches and wall lights at other unit entries will provide a welcoming glow and make it possible to see potential intruders from the street. The mix of pole lights, building-mounted lights, and security lights will provide soft, even illumination that promotes a sense of safety and encourages residents to use their outdoor spaces at night, while reducing energy costs, maintenance costs, and light pollution. In addition, the design and placement of light fixtures would be reviewed for consistency with City standards (Municipal Code Section 19.20.030.14). Standards require shielding, diffusing, or indirect lighting to avoid glare. These standards would ensure that potential impacts would be less than significant. (*Less than significant*)

Aesthetics Mitigation Measures:

None required.

II. AGRICULTURE AND FORESTRY RESOURCES

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
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 a non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) 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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

The project site is located in an urbanized and developed area near the center of the City of San Bernardino. Existing development on the site includes 252 residential dwelling units, a management office building, Head Start facility, and maintenance facility. The City of San Bernardino is designated Urban and Built-Up Land on the maps prepared for the California Department of Conservation Farmland Mapping and Monitoring Program. There are no areas designated as Prime and Unique Farmland within the City.⁴ There is no forest land or timberland on the project site.

Discussion

a) *Would the project 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?*

As described in existing conditions, there are no areas designated as Prime and Unique Farmland by the California Resources Agency within the City. The project site is an existing residential developed and disturbed site and will not convert farmland to non-agricultural use. Therefore, no impacts are anticipated. (*No Impact*)

⁴ California Department of Conservation, 2009, *San Bernardino Important Farmland 2008*, (ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2008/sbd08_so.pdf).

b) Would the project 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))?

The project site is currently designated residential and there is no forest land, timberland, or timberland zoned Timberland Production on the site. Therefore, no impacts are anticipated. *(No Impact)*

c) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

The project site is currently developed with residential uses and there is no forest land on the site. Therefore, no impacts are anticipated. *(No Impact)*

d) Would the project 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 of conversion of forest land to non-forest use?

The project site is currently developed with residential uses and there is no farmland on the site. Therefore, no impacts are anticipated. *(No Impact)*

Agriculture and Forestry Resources Mitigation Measures:

None required.

III. AIR QUALITY

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan? (South Coast Air Basin)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation based on the thresholds in the SCAQMD's "CEQA Air Quality Handbook?"	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people based on the information contained in Project Description Form?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

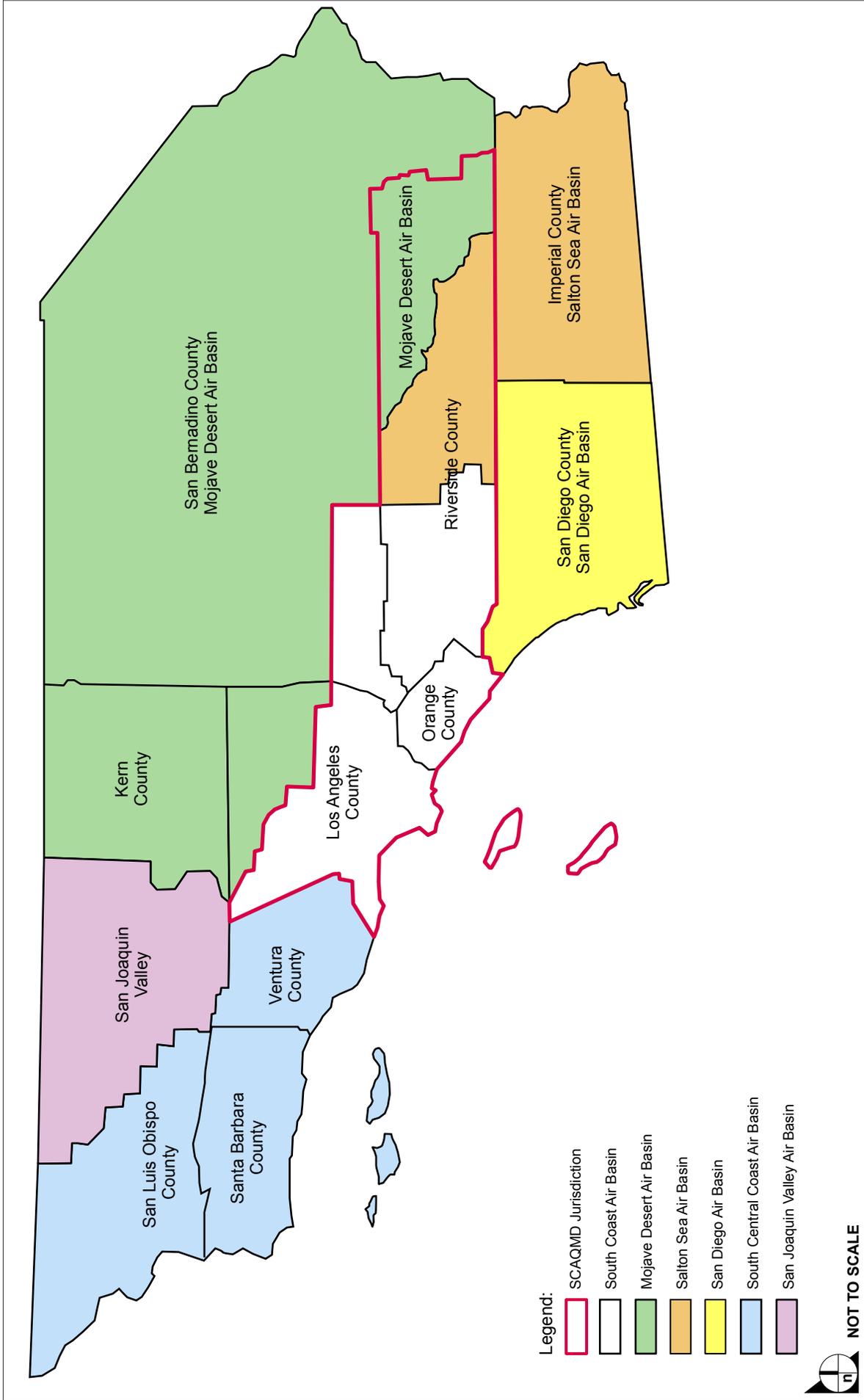
Existing Conditions

The following discussion is based on the Waterman Gardens Master Plan Project Air Quality Assessment prepared by Impact Sciences, Inc. in July 2011 (Appendix A).

The project is located in the South Coast Air Basin (Basin), shown in Figure 4, which is a geographical region that shares the same air pollution concerns. The Basin consists of Orange County, Los Angeles County (excluding the Antelope Valley portion), and the western, non-desert portions of San Bernardino and Riverside Counties. The South Coast Air Quality Management District (SCAQMD) is the air pollution control agency for the Basin.

The United States Environmental Protection Agency (U.S. EPA) and the State of California have adopted health-based air quality standards, known as the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for the following seven criteria air pollutants: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and lead (Pb). The California standards are generally more stringent than the federal standards and in the case of PM₁₀ and SO₂, much more stringent. California has also established standards for sulfates, visibility reducing particles, hydrogen sulfide and vinyl chloride, none of which have corresponding federal standards.

The U.S. EPA is responsible for enforcing the federal Clean Air Act and the NAAQS. As part of its enforcement responsibilities, the U.S. EPA requires each State with areas that do not meet the NAAQS to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to



Source: Impact Sciences, Inc., 2011.

FIGURE 4
 SOUTH COAST AIR BASIN

attain the federal standards. The U.S. EPA formally classifies air basins as attainment or nonattainment based on whether the region meets or exceeds the NAAQS. The status of the Basin with respect to attainment with the NAAQS is summarized in Table 1.

TABLE 1 *ATTAINMENT STATUS – SOUTH COAST AIR BASIN (SAN BERNARDINO COUNTY PORTION)*

Pollutant	State	Federal
Ozone (O ₃)	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Attainment (Maintenance)
Nitrogen Dioxide (NO ₂)	Nonattainment	Attainment (Maintenance)
Sulfur Dioxide (SO ₂)	Attainment	Unclassified/Attainment
Respirable Particulates (PM10)	Nonattainment	Nonattainment
Fine Particulates (PM2.5)	Nonattainment	Nonattainment
Lead (Pb)	Attainment	Unclassified
Sulfates (SO ₄)	Attainment	—
Hydrogen Sulfide (H ₂ S)	Unclassified	—
Vinyl Chloride	Unclassified	—
Visibility-Reducing Particles	Unclassified	—

Sources: California Air Resources Board, “Area Designations Maps / State and National,” <http://www.arb.ca.gov/desig/adm/adm.htm>, 2011. U.S. Environmental Protection Agency, “Air Quality Maps,” <http://www.epa.gov/region9/air/maps/index.html>, 2011.

CARB oversees air quality planning and control throughout California and is primarily responsible for ensuring implementation of the California Clean Air Act. In addition, CARB sets health based air quality standards and control measures for toxic air contaminants (TACs). The California Clean Air Act established a legal mandate for air basins to achieve the CAAQS by the earliest practical date. Health and Safety Code Section 39607(e) requires CARB to establish and periodically review area designation criteria. These designation criteria provide the basis for CARB to designate areas of the State as attainment, nonattainment, or unclassified according to State standards. The status of the Basin with respect to attainment with the CAAQS is summarized in Table 1.

The SCAQMD is responsible for bringing air quality in the areas under its jurisdiction into conformity with federal and State air quality standards. In order to achieve these standards, the SCAQMD adopts an Air Quality Management Plan (AQMP) that serves as a guideline to bring pollutant concentrations into attainment with federal and State standards. The *2007 Air Quality Management Plan* focuses on attainment strategies for the ozone and PM2.5 standards through stricter control of sulfur oxides and directly emitted PM2.5, NO_x, and VOCs. In addition, the AQMP focuses on reducing VOC emissions, which have not been reduced at the same rate as NO_x emissions in the past.

The project site is located in the Central San Bernardino Valley Source Receptor Area (SRA 34). The monitoring station located closest to the project site is at 24302 East 4th Street, San Bernardino (Station No. 5203) and is approximately 0.84 miles south of the project site. This station monitors emission levels of O₃, NO₂, CO, PM10, and PM2.5. The station located at 14360 Arrow Highway, Fon-

tana (Station No. 5197), approximately 12 miles west of the project site, was used to establish background levels for SO₂. Table 2, Ambient Pollutant Concentrations, lists the ambient pollutant concentrations registered and the exceedances of State and federal standards that have occurred at the abovementioned monitoring station from 2007 through 2009, the most recent years in which data is available from the SCAQMD. As shown, the monitoring station has registered values above State and federal standards for O₃, the State standard for PM₁₀, and the federal standard for PM_{2.5}.

Discussion

The air quality assessment of the proposed project, performed by Impact Sciences, Inc., utilized the California Emissions Estimator Model (CalEEMod)⁵ to analyze the proposed project emissions during construction and operation. CalEEMod is a program that calculates air emissions from land use sources and incorporates the CARB's EMFAC2007 model for on-road vehicle emissions and the OFFROAD2007 model for off-road vehicle emissions. Site-specific or project-specific data were used in the CalEEMod model where available.

The SCAQMD's *Final Localized Significance Threshold Methodology* ("LST Methodology") was used to assess conformity with the established localized significance thresholds (LSTs). The SCAQMD has established screening criteria that can be used to determine the maximum allowable daily emissions that would satisfy the thresholds without project-specific dispersion modeling. The project site is located in SRA 34 and is larger than 5 acres; however, using the screening levels for a 5-acre project would result in a conservative analysis as the thresholds would be set at a much lower level.⁶ Construction of the site would occur in phases and the maximum amount of disturbed area during project construction is estimated to be 7.5 acres. The nearest off-site sensitive receptors are located adjacent to the project site across Baseline Street and Waterman Avenue. The LST Methodology states that "projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters."⁷ Since the nearest sensitive receptors (residential land uses) are located about 25 meters from the project site, a 25-meter distance was used to determine the screening criteria.

a) Would the project conflict with or obstruct implementation of the applicable air quality plan? (South Coast Air Basin)

A project is consistent with the AQMP if it meets the following indicators:

1. The project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.
2. The project will not exceed the assumptions in the AQMP in 2010 or increments based on the year of project build-out.

⁵ South Coast Air Quality Management District, "CalEEMod, Version 2011.1.1," <http://www.caleemod.com/>.

⁶ Ian MacMillan, Program Supervisor-CEQA, South Coast Air Quality Management District, personal communication with Alan Sako, Impact Sciences, Inc., March 31, 2011.

⁷ South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, (2008) 3-3.

TABLE 2 *AMBIENT AIR POLLUTANT CONCENTRATIONS*

Pollutant	Standards ^a	Year		
		2007	2008	2009
Ozone (O₃)				
Maximum 1-hour concentration (ppm)		0.153	0.157	0.150
Maximum 8-hour concentration (ppm)		0.121	0.122	0.126
Number of days exceeding State 1-hour standard	0.09 ppm	48	62	53
Number of days exceeding State 8-hour standard	0.070 ppm	74	90	79
Number of days exceeding federal 8-hour standard	0.075 ppm	51	62	62
Nitrogen Dioxide (NO₂)				
Maximum 1-hour concentration (ppm)		0.08	0.09	0.08
Annual average concentration (ppm)		0.0245	0.0217	0.0196
Number of days exceeding State 1-hour standard	0.18 ppm	0	0	0
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		4	2	3
Maximum 8-hour concentration (ppm)		2.3	1.8	1.9
Number of days exceeding 1-hour standard	20 ppm	0	0	0
Number of days exceeding 8-hour standard	9.0 ppm	0	0	0
Sulfur Dioxide (SO₂)				
Maximum 1-hour concentration (ppm)		0.01	0.01	0.01
Maximum 24-hour concentration (ppm)		0.004	0.003	0.002
Number of days exceeding State 1-hour standard	0.25 ppm	0	0	0
Number of days exceeding State 24-hour standard	0.04 ppm	0	0	0
Respirable Particulate Matter (PM₁₀)				
Maximum 24-hour concentration (μg/m ³)		136	76	66
Annual average concentration (μg/m ³)		51.4	42.7	41.5
Number of samples exceeding State standard	50 μg/m ³	28	19	11
Number of samples exceeding federal standard	150 μg/m ³	0	0	0
Fine Particulate Matter (PM_{2.5})				
Maximum 24-hour concentration (μg/m ³)		72.1	43.5	37.9
Annual average concentration (μg/m ³)		18.3	13.5	13.0
Number of samples exceeding federal 24-hour standard	35 μg/m ³	11	3	3

^a Parts by volume per million of air (ppm), micrograms per cubic meter of air (μg/m³), or annual arithmetic mean (aam).
 Source: South Coast Air Quality Management District, "Historical Data by Year," <http://www.aqmd.gov/smog/historicaldata.htm>, 2010.

As discussed later in this section, the proposed project would not exceed the significance thresholds for construction or operational emissions. In addition, the project would not exceed the screening criteria for the localized significance thresholds. Therefore, since the project would not exceed the thresholds, it would not increase the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

Consistency with the assumptions in the AQMP is established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast. The *2007 Air Quality Management Plan* based its assumptions on growth forecasts contained in the *SCAG 2004 Regional Transportation Plan (RTP)*.⁸ The 2004 RTP is based on growth assumptions through 2030 developed by each of the cities and counties in the SCAG region. The project would result in the demolition of the existing structures and construction of new buildings with similar uses. The proposed project will not change the land use designation on the site, and is therefore within the growth anticipated in the City's General Plan. A General Plan amendment would not be required. Therefore, the proposed project is considered to be consistent with growth assumptions included in the AQMP. Accordingly, the proposed project complies with Consistency Criterion No. 2. Therefore, potential impacts would be less than significant. (*Less than significant*)

b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation based on the thresholds in the SCAQMD's "CEQA Air Quality Handbook?"

Construction activities have the potential to cause temporary significant impacts with respect to air quality standards. Construction would occur during five main phases.

The number and types of construction equipment, vendor trips (e.g., transport of building materials), and worker trips assumed were based on values provided in the CalEEMod model. In addition, grading amounts were based on factors provided in the CalEEMod model. In order to account for dust suppression in the CalEEMod model, it was assumed that the project contractor would comply with SCAQMD Rule 403 (Fugitive Dust) by applying water a minimum of three times daily for dust suppression. The emission reduction percentage associated with Rule 403 dust suppression was based on data from the SCAQMD. It was also assumed that construction vehicles would conform with engine emissions requirements as described in the U.S. EPA/CARB off-road engine certification program.

As shown in Table 3, construction emissions would not exceed the SCAQMD threshold of significance. Therefore construction of the proposed project would have a less than significant impact on air quality in the region.

Operational Emissions

Operational emissions would be generated by both area and mobile sources as a result of normal day-to-day activities on the project site after location. Area source emissions would be generated by the consumption of natural gas for space and water heating devices (including residential use water heater

⁸ South Coast Air Quality Management District, *Final 2007 Air Quality Management Plan*, (2007) 3-1.

TABLE 3 *ESTIMATED CONSTRUCTION EMISSIONS*

Construction Year	Maximum Emissions in Pounds per Day ^a					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
2013	7.92	50.38	58.13	0.10	7.66	4.74
2014	4.40	25.83	29.65	0.05	2.83	2.03
2015	40.69	35.12	68.40	0.13	8.48	3.41
2016	19.63	15.44	69.34	0.14	7.75	1.00
2017	18.95	7.33	49.10	0.08	3.19	1.63
2018	15.52	16.51	88.80	0.16	4.69	1.97
2019	13.84	16.60	85.01	0.16	7.72	1.93
2020	25.46	14.25	71.78	0.14	5.97	1.89
2021	14.65	17.84	78.48	0.15	10.65	1.96
2022	12.38	7.45	49.02	0.09	1.81	0.40
SCAQMD Threshold:	75	100	550	150	150	55
Exceeds Threshold?	NO	NO	NO	NO	NO	NO

Note: Totals in table may not appear to add exactly due to rounding in the computer model calculations.

^a PM₁₀ and PM_{2.5} fugitive dust emissions incorporate watering as a control measure.

Source: Impact Sciences, Inc.

and boilers), the operation of landscape maintenance equipment, and from the use of consumer products. Mobile emissions would be generated by the motor vehicles traveling to and from the project site.

The project's operational emissions would result in a significant impact to air quality in the region if they would exceed the SCAQMD thresholds of significance. The proposed project would be operational in 2022; therefore, the year 2022 was used to estimate the operational emissions. Table 4 shows the operational emissions associated with the project. Because the project site is currently developed with existing uses, the existing site emissions were estimated in order to determine the project's resulting net change in emissions. The existing site's mobile and area source emissions were calculated for year 2011 using emission factors in the CalEEMod model and trip generation rates from the traffic report.

As shown in Table 4, the net change in operational emissions associated with implementation of the proposed project would not exceed the SCAQMD thresholds for significance for any pollutant. Projects that generate emissions below the thresholds of significance would not be considered to contribute a substantial amount of air pollutant to regional air quality. Therefore, operational emissions associated with the proposed project would be considered a less than significant impact. (*Less than significant*)

For the reasons described above, the impacts associated with construction and operational emissions would be less than significant. (*Less than significant*)

TABLE 4 ESTIMATED OPERATIONAL EMISSIONS

Emissions Source	Emissions in Pounds per Day					
	VOC	NO _x	CO	SO _x	PM10	PM2.5
Summertime Emissions^a						
Project Emissions						
Operational (Mobile) Sources	17.44	44.34	147.75	0.46	50.50	2.65
Area Sources	16.16	3.97	43.92	0.02	0.50	0.50
Summertime Emissions Total	33.60	48.31	191.67	0.48	51.00	3.15
Existing Land Use Emissions						
Operational (Mobile) Sources	19.43	53.53	198.08	0.27	30.57	2.94
Area Sources	33.25	2.56	106.00	0.21	13.53	13.53
Summertime Emissions Total	52.68	56.09	304.08	0.48	44.10	16.46
Net Summertime Emissions Total	-19.08	-7.78	-112.41	0	6.90	-13.31
SCAQMD Threshold	55	55	550	150	150	55
Exceeds Threshold?	NO	NO	NO	NO	NO	NO
Wintertime Emissions²						
Project Emissions						
Operational (Mobile) Sources	17.56	45.67	138.13	0.42	50.52	2.66
Area Sources	16.16	3.97	43.92	0.02	0.50	0.50
Wintertime Emissions Total	33.72	49.64	182.05	0.44	51.02	3.16
Existing Land Use Emissions						
Operational (Mobile) Sources	19.57	56.85	182.55	0.24	30.60	2.97
Area Sources	33.25	2.56	106.00	0.21	13.53	13.53
Wintertime Emissions Total	52.82	59.41	288.55	0.45	44.13	16.49
Net Wintertime Emissions Total	-19.10	-9.77	-106.5	-0.01	6.89	-13.33
SCAQMD Threshold	55	55	550	150	150	55
Exceeds Threshold?	NO	NO	NO	NO	NO	NO

Note: Totals in table may not appear to add exactly due to rounding in the computer model calculations.

^a *Summertime Emissions* are representative of the conditions that may occur during the ozone season (May 1 to October 31).

^b *Wintertime Emissions* are representative of the conditions that may occur during the balance of the year (November 1 to April 30).

Source: Impact Sciences, Inc.

c) *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project area is in non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative Standards for ozone precursors or other pollutants)?*

According to the SCAQMD CEQA Air Quality Handbook, projects that are within the emission thresholds identified above should be considered less than significant on a cumulative basis unless there is other pertinent information to the contrary.⁹ As shown in Tables 3 and 4, the project would not exceed the construction or operational project-level thresholds.

⁹ South Coast Air Quality Management District, CEQA Air Quality Handbook, (1993) 9–12.

The SCAQMD’s *CEQA Air Quality Handbook* also identifies three other possible methods to determine the cumulative significance of the project’s emissions. However, one method is no longer recommended or supported by the SCAQMD, and another method is not applicable as the SCAQMD repealed the underlying regulation (Regulation XV) after the *CEQA Air Quality Handbook* was published.¹⁰ Therefore, the only viable SCAQMD method for determining cumulative impacts is based on whether the rate of growth in vehicle miles traveled (VMT) exceeds the rate of growth in population. Using this method, the ratio of a project’s VMT to anticipated VMT in the city or county in which the project is located is compared to the ratio of the project population to the anticipated population in the same city or county. If the VMT ratio is less than the population ratio, then the project is not considered to have a significant cumulative air quality impact. The VMT factors are obtained from CalEEMod and EMFAC2007. As shown in Table 5, this criterion has been met, and therefore the project would not have a significant cumulative impact on air quality under this criterion. Therefore, the impact would be less than significant. (*Less than significant*)

TABLE 5 *COMPARISON OF VEHICLE MILES TRAVELED TO POPULATION (2022)*

Comparison Item	Vehicle Miles Traveled	Population
Proposed Project	14,747 [NET]	533 [NET]
San Bernardino County	70,872,000	2,659,237
Ratio of Project to San Bernardino County	0.000208	0.000312

Note: The estimated project VMT was estimated from CalEEMod. The estimated VMT in San Bernardino County in 2022 was determined by EMFAC2007. The project population includes residents only. The county population projections were obtained from the latest SCAG projections in its 2008 RTP Growth Forecast. The 2022 population was linearly interpolated from the 2020 and 2025 SCAG projections.

Source: Impact Sciences, Inc.

d) *Would the project expose sensitive receptors to substantial pollutant concentrations?*

Localized Significance Thresholds Analysis

The SCAQMD recommends the evaluation of localized air quality impacts to sensitive receptors in the immediate vicinity of the project site as a result of construction and operational activities. The thresholds are based on standards established by the SCAQMD in the LST Methodology. The thresholds for NO₂ and CO represent the allowable increase in concentrations above background levels in the vicinity of the project that would not cause or contribute to an exceedance of the relevant ambient air quality standards. The threshold for PM₁₀ and PM_{2.5} are based on emission levels specified in SCAQMD rules so as to aid in progress toward attainment of the ambient air quality standards.

The localized significance thresholds are compared to construction and operational emissions that occur on the project site. The thresholds do not apply to emissions occurring off the project site, such as emissions from motor vehicles.¹¹ The project’s on-site emissions for construction and operation are shown in Table 6. As shown, construction and operation of the project would generate on-site emis-

¹⁰ The two methods that are no longer recommended and supported by the SCAQMD are: (1) demonstrating a 1 percent per year reduction in project emissions of VOC, NO_x, CO, SO_x, and PM₁₀ and (2) demonstrating a 1.5 average vehicle ridership, or average vehicle occupancy for a transportation project.

¹¹ South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, (2008) 1-4.

sions that are less than the site-specific localized significance thresholds. Therefore the project would have a less than significant impact on localized air quality.

It should be noted that the U.S. EPA promulgated a new 1-hour NAAQS for nitrogen dioxide (NO₂). The new 1-hour standard is 100 parts per billion (ppb) (188 micrograms per cubic meter [$\mu\text{g}/\text{m}^3$]) and went into effect on April 12, 2010. Compliance with the standard is determined on a statistical basis (i.e., the 3-year average of the 98th-percentile of the annual distribution of daily maximum 1-hour concentrations). The U.S. EPA also retained the existing annual average standard of 53 ppb (100 $\mu\text{g}/\text{m}^3$).

The LST analysis should be based on the most stringent ambient air quality standards in effect. Prior to the new U.S. EPA standard, the 1-hour CAAQS for NO₂ was the most stringent standard at 180 ppb. The SCAQMD screening tables for NO₂ are based on the 1-hour CAAQS. The SCAQMD has not revised the LST screening tables to correspond to the new U.S. EPA 1-hour NO₂ standard. However, as shown in Tables 3 and 4, the NO_x emissions are much less than the NO_x screening criteria shown in Table 6. Given that the project's NO_x emissions are well under the screening criteria, the project would not cause or contribute to an exceedance of the new U.S. EPA 1-hour NO₂ standard at nearby sensitive receptors.

CO Hotspots Analysis

As shown in Table 2 in existing conditions, carbon monoxide levels in the project area are substantially below the federal and State standards. No exceedances of CO have been recorded at monitoring stations in the Basin for some time and the Basin is currently designated as a CO attainment area for both the CAAQS and NAAQS. Nonetheless, localized CO concentrations have the potential to exceed the CAAQS or NAAQS at heavily congested roadway intersections. Localized areas where ambient concentrations exceed State and/or federal standards are termed CO hotspots.

The proposed project was evaluated to determine if it would cause a CO hotspot using a simplified CALINE4 screening model developed by the Bay Area Air Quality Management District (BAAQMD). The model is used to predict future CO concentrations 0 feet from the intersections (directly adjacent to the roadway) in the study area based on projected traffic volumes from the intersections contained in the traffic report for the proposed project.¹² The traffic report identifies the level of service (LOS) for impacted intersections. Intersections operating at a LOS of E or F are considered to have the potential to create a CO hotspot.¹³ For the purposes of this analysis, intersections estimated to operate at LOS D, E, or F under future cumulative plus project traffic conditions were analyzed. Maximum future (2030) cumulative plus project CO concentrations were calculated for peak hour morning and evening traffic volumes using the highest traffic volumes in the traffic report associated with the proposed project.¹⁴ Background CO concentrations were included in the analysis. The

¹² Fehr & Peers, 2011, *Draft Waterman Gardens Master Plan Traffic Impact Analysis*.

¹³ Institute of Transportation Studies, University of California, Davis, 1997, *Transportation Project-Level Carbon Monoxide Protocol*.

¹⁴ Fehr & Peers, 2012, *Draft Waterman Gardens Master Plan Traffic Impact Analysis*. Though the traffic analysis maximum future buildout year was 2033 and the above analysis was based on 2030 buildout, the analysis also was based on a 500-unit project versus the proposed 411-unit project and thus presents a worst-case scenario.

TABLE 6 LOCALIZED SIGNIFICANCE THRESHOLDS ANALYSIS

Significance Threshold	Pollutant (pounds per day) ^a			
	NO _x	CO	PM10	PM2.5
Construction				
Maximum Daily On-Site Emissions	50.38	88.80	10.65	4.74
LST Screening Criteria	270	1,746	14	8
Exceeds Threshold?	NO	NO	NO	NO
Operational				
Maximum Daily On-Site Emissions	3.97	43.92	0.50	0.50
LST Screening Criteria	270	1,746	4	2
Exceeds Threshold?	NO	NO	NO	NO

^a The NO_x thresholds contained in the SCAQMD lookup tables are based on emissions of NO_x and assume gradual conversion to NO₂ based on the distance from the project site boundary.

Source: South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, (2008), Appendix C.

results of these CO concentration calculations are presented in Table 7 for representative receptors located 0 feet from the intersection.

As shown in Table 7, the CALINE4 screening procedure predicts, under future (2030) plus project conditions, that future CO concentrations would not exceed the State 1-hour and 8-hour standards at impacted intersections. No significant CO hotspot impacts would occur to sensitive receptors in the vicinity of these intersections. Therefore, the project would result in a less than significant impact relative to future CO concentrations.

Toxic Air Contaminants

Emissions of TACs would be significant if sensitive receptors would be exposed to a carcinogenic risk that exceeds 10 in 1 million or a non-cancer Hazard Index greater than 1.0. However, the land uses associated with the proposed project are not anticipated to emit TACs in measureable quantities. Sources of TACs from the project’s residential and community commercial land uses may include household solvents and cleaners and motor vehicle emissions. However, residential land uses do not typically generate TAC emissions in quantities that would exceed the SCAQMD thresholds. Additionally, the project would not attract a substantial number of diesel trucks and would not regularly use other types of diesel-fueled equipment. Therefore, the project would not result in TAC emissions that exceed the significance thresholds.

However, the project may locate sensitive receptors on-site that could be exposed to off-site sources of TAC emissions. The SCAQMD maintains a database of permitted stationary sources of emissions in the Basin. Based on a survey of data obtained from the SCAQMD’s Facility Information Detail

TABLE 7 **MAXIMUM CARBON MONOXIDE CONCENTRATIONS**

Intersection	Concentration at 0 Feet (parts per million [ppm])	
	1-Hour	8-Hour
Waterman Avenue / Highland Avenue	4.7	2.8
Waterman Avenue / Baseline Street	4.8	2.8
Waterman Avenue / 5 th Street	4.9	3.0
La Junita Street / Baseline Street	4.5	2.7
Exceeds State 1-Hour Standard of 20 ppm?	NO	—
Exceeds Federal 1-Hour Standard of 35 ppm?	NO	—
Exceeds State 8-Hour Standard of 9.0 ppm?	—	NO
Exceeds Federal 8-Hour Standard of 9 ppm?	—	NO

Source: Impact Sciences, Inc.

(FIND)¹⁵ system, several facilities that contain permitted equipment as required by Rule 1401 (New Source Review of Toxic Air Contaminants) are located within a 0.25 mile of the project site. These facilities include one automobile body shop, one juice packing company, and one general government facility. The automobile body shop, Nifty Collision Center (Facility ID 124387), received a Notice to Comply (NTC) in 2009. The NTC was in regards to recordkeeping requirements for VOC emissions pursuant to SCAQMD Rule 109 and posting requirements for the permit to operate pursuant to Rule 206. All permitted facilities near to the project site, at the time of this report, are currently in compliance. Therefore, while residents of the proposed project would be located within 0.25 mile of an existing facility that emits air toxics identified in Rule 1401, the impact would be less than significant in accordance with general requirements of Rule 1401.

CARB has determined that adverse health effects are generally elevated near heavily traveled roadways. This is due to motor vehicle emissions, which include TACs, such as diesel particulate matter, benzene, and 1,3-butadiene. The CARB guidance document, *Air Quality and Land Use Handbook*, recommends that lead agencies, where possible, avoid citing new sensitive land uses within 500 feet of a freeway,¹⁶ urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Regional access to the project site is provided by Interstate 210 and Interstate 215. However, both of these freeways are located well over one mile from the project site. Thus, the project would not locate sensitive land uses within 500 feet of a freeway. In addition, the average daily trips on nearby road-

¹⁵ South Coast Air Quality Management District, 2011, “Facility Information Detail (FIND),” <http://www.aqmd.gov/webappl/fim/default.htm>.

¹⁶ California Air Resources Board, *Air Quality and Land Use Handbook*, (2005) p. 8-9. The 2002 study of impacts along the San Diego (I-405) Freeway and the Long Beach (I-710) Freeway cited by CARB in its *Air Quality and Land Use Handbook* found a substantial reduction in pollutant concentrations, relative exposure, and health risk beyond 300 feet.

ways are well under the 100,000 limit for urban roads.¹⁷ For these reasons, no significant impacts are anticipated with respect to mobile source TACs.

Between April 2004 and March 2006, the SCAQMD conducted the Multiple Air Toxics Exposure Study III (MATES III). The MATES III study, based on actual monitored data throughout the Basin, consisted of several elements. These included a monitoring program, an updated emissions inventory of TACs, and a modeling effort to characterize carcinogenic risk across the Basin from exposure to TACs. The MATES III study applied a 2-kilometer (1.24-mile) grid over the Basin and reported carcinogenic risk within each grid space (covering an area of 4 square kilometers or 1.54 square miles). The study concluded that the average of the modeled air toxics concentrations measured at each of the monitoring stations in the Basin equates to a cancer risk of approximately 1,200 in 1,000,000 primarily due to diesel exhaust. Based on the MATES III study, the proposed project is located in an area with an approximate carcinogenic risk of 803 in 1,000,000.¹⁸ The carcinogenic risk for nearby surrounding grids ranges from 695 to 1,058 in 1,000,000. As stated above, the proposed project is not in close proximity to any freeways or urban roadways with over 100,000 average daily trips. Accordingly, based on the MATES III data and the substantial reduction of health effects from freeways beyond 300 feet, the impacts from TACs at the project site would not be any higher than those experienced by the general population in the project area. Therefore, the proposed project would not expose sensitive receptors to substantial increases in health risks and pollutant concentrations relative to the general population and is considered to have a less than significant impact.

For the reasons stated above, the impacts to sensitive receptors would be less than significant. (*Less than significant*)

e) Would the project create objectionable odors affecting a substantial number of people based on the information contained in Project Description Form?

During project construction, certain pieces of construction equipment and construction activities could emit odors associated with exhaust emissions and evaporative VOCs. Diesel odors emitted from construction equipment would be short term and dissipate quickly. Odors from spray-coating applications of paint and related materials during construction would be regulated by SCAQMD Rule 481 (Spray Coating Operations). This rule imposes equipment and application restrictions during spray painting and spray coating operations. Compliance with SCAQMD rules and permit requirements would ensure no objectionable odors would be created during construction. Therefore, impacts from odors during construction would be less than significant.

The SCAQMD lists land uses primarily associated with odor complaints as waste transfer and recycling stations, wastewater treatment plants, landfills, composting operations, petroleum operations, food and byproduct processes, factories, and agricultural activities, such as livestock operations. The proposed project does not include the development and operation of any of these land uses, with the exception of the recycling facility proposed in the northeast corner of the project site. This will be a

¹⁷ Fehr & Peers, 2011, *Draft Waterman Gardens Master Plan Traffic Impact Analysis*.

¹⁸ The SCAQMD provides an online MATES III carcinogenic risk interactive map, which is at <http://www2.aqmd.gov/webappl/matesiii/>. The interactive map displays the modeled grids and associated risk within each grid.

collection facility only and it is not anticipated to generate significant odors since the waste will be transported to an off-site location for recycling. In addition, the project is not located downwind and in close proximity to these sources of odors. Therefore, it is not anticipated that the project residents would be adversely affected by off-site odorous emissions. Therefore, no significant impacts from odors are anticipated from operation of the proposed project.

Any unforeseen odors generated by the proposed project would be controlled in accordance with SCAQMD Rule 402 (Nuisance). Rule 402 prohibits the discharge of air contaminants that cause “injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.” Failure to comply with Rule 402 could subject the offending facility to possible fines and/or operational limitations in an approved odor control or odor abatement plan, as deemed necessary by the SCAQMD. Adherence to Rule 402 would mitigate unforeseen odors to a less than significant level.

Therefore, the proposed project would not have a significant impact on air quality with respect to objectionable odors. (*Less than significant*)

Air Quality Mitigation Measures:

Although no significant impacts were found as a result of the proposed project, the following dust control measures will be required in order to control fugitive dust emissions during construction:

- ◆ Limit traffic speeds on unpaved roads to 15 mph.
- ◆ Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- ◆ Replant vegetation in disturbed areas as quickly as possible.
- ◆ Limit access to the construction sites, so tracking of mud or dirt on to public roadways can be prevented. If necessary, use wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.
- ◆ Suspend excavation and grading activity when winds (instantaneous gusts) exceed 20 mph or dust clouds cannot be prevented from extending beyond the site.

IV. BIOLOGICAL RESOURCES

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
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 Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinances?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

The project site is in an urbanized, extensively developed area near the center of the City of San Bernardino. Currently developed with residential development and related buildings, the project site has active recreation open space areas, consisting primarily of turf and landscaping, and just under 500 trees. Many of the existing trees are in poor health and condition.

Portions of the City of San Bernardino fall within the U.S. Fish and Wildlife Service (USFWS) Designated Critical Habitats of the San Bernardino kangaroo rat and California gnatcatcher.¹⁹ These habitats are limited to the areas along the base of the San Bernardino Mountains in the northern part of the City, the Santa Ana River, and the northwestern edge of the City.²⁰ The project site does not fall

¹⁹ City of San Bernardino, 2005, *General Plan Update and Associated Specific Plans EIR*, page 5.3-3

²⁰ City of San Bernardino, 2005, *General Plan Update and Associated Specific Plans EIR*, page 5.3-5.

within areas designated in the City's General Plan as potential habitat for sensitive wildlife or biological resource areas.²¹

There is no approved Habitat Conservation Plan, Natural Community Conservation Plan, or other approved habitat conservation plan for the valley portion of San Bernardino County, including the City of San Bernardino.

Discussion

a) Would the project 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 Game or US Fish and Wildlife Service?

As described above in existing conditions, the project site does not occur within an area designated as potential habitat for sensitive wildlife or a biological resource area. The site and surrounding area occur within a developed and highly disturbed area. No 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 CDFG or the USFWS is anticipated. Therefore, no impacts are anticipated. *(No Impact)*

b) Would the project 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?

According to Figure 5.3-2 of the General Plan EIR (see Figure 5 below), no riparian habitat occurs on or near the project site.²² Therefore, the project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or USFWS. Therefore, no impacts are anticipated. *(No Impact)*

c) Would the project 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?

The project site is not within an identified protected wetland, nor near any jurisdictional drainage and would not 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, (see Section VIII for additional discussion).²³ Therefore, no impacts are anticipated. *(No Impact)*

²¹ City of San Bernardino, 2005, *General Plan Update and Associated Specific Plans EIR*, pages 5.3-5 and 5.3-11.

²² City of San Bernardino, 2005, *General Plan Update and Associated Specific Plans EIR*, page 5.3-11.

²³ City of San Bernardino, 2005, *General Plan Update and Associated Specific Plans EIR*, page 5.3-11.

d) Would the project 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?

The proposed project site is developed and surrounded by existing development and therefore, is unlikely to provide an important location relative to regional wildlife movement. Wildlife movement near the site has been restricted by development, including road construction and high levels of vehicular traffic. Therefore, project implementation would not impact a local or regional wildlife corridor and no impacts are anticipated. *(No Impact)*

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinances?

The proposed project would not conflict with any local policies or ordinances protecting biological resources, as there are no identified biological resources on the project site that are subject to such regulation. In addition, the project site is not located within an identified sensitive habitat or biological resource area. Therefore, no impacts are anticipated. *(No Impact)*

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

There is no adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or State habitat conservation plan in the City of San Bernardino. Therefore, the proposed project would not conflict with the provisions of an HCP, NCCP or other habitat conservation plan, and no impacts are anticipated. *(No Impact)*

Biological Resources Mitigation Measures:

None required.

V. CULTURAL RESOURCES

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Be developed in a sensitive archaeological area as identified in the City’s General Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of CEQA?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5 of CEQA?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

The following discussion is based on the Archeological Assessment Literature Study and the Historic Resource Evaluation prepared by Cogstone Resource Management, Inc. in May 2011 (Appendix B and C, respectively).

Archeological Assessment

The Archeological Assessment Literature Study included a records search, Native American Sacred Lands file search, consultation with Native American Tribes and individuals, and assessment of previously known cultural resources within the project area. The historic resource assessment and evaluation included an inspection of the buildings and landscape that comprise the project site, combined with a review of local and regional historic archives regarding the complex. The criteria of the National Register of Historic Places (NRHP) were used to assess the historical significance of Waterman Gardens. There have been no previous investigations of the built-environment resources on the property known as Waterman Gardens.

The archeological record search, completed on May 2, 2011 at the San Bernardino Archeological Information Center, indicated there are no previously recorded archaeological sites and no prior studies within the project area. Four historic-era resources are known and eight prior archaeological studies have been completed within a one-mile radius of the project area. The four known historic-era resources within a one-half-mile radius of the Area of Potential Effect (APE), shown in Figure 2 in Appendix B, include a historic cemetery, a road and several structures. According to the Native American Heritage Commission (NAHC) there are no known sacred lands in the project vicinity, shown in Figure 1 in Appendix B.²⁴

²⁴ Singleton, Dave. Native American Heritage Commission, Personal Communication with Sherry Gust of Cogstone Resource Management, April 28, 2011.

The affiliations of early Native American peoples of the project area are poorly understood. They were replaced about 1,000 years ago by the Gabrielino (Tongva) who were semi-sedentary hunters and gatherers. At European contact, the Gabrielino tribe consisted of more than 5,000 people living in various settlements throughout the area. The project area was not home to any known major Gabrielino villages. However, smaller villages and seasonal camps were present in the project area.

Historic Resources Evaluation

The historic resource evaluation found that Waterman Gardens is eligible for listing under Criterion A of the National Register of Historic Places (NRHP) for its association with the Housing Act of 1937 and as a good example of a “garden style” type of housing complex. Waterman Gardens was constructed as a direct outcome of the Housing Act and its ability to fund the capital costs of constructing low-income housing in San Bernardino County. The complex integrated relatively low-cost housing units within a thoughtfully landscaped and community setting, reflective of the influence of social reformers and early twentieth-century planners. Waterman Gardens is also eligible under Criterion C as a good example of the “garden style” public housing complex design dating from 1943 to 1950.

While the Waterman Gardens housing units have been slightly altered over time, they still retain their ability to convey their historic significance. The modestly designed housing units at Waterman Gardens retain their integrity of location, design, setting, materials, workmanship, feeling and association. The low-pitched roofs and wide overhanging eaves, combined with the sparse stucco finish and placement of windows, brought a modern aesthetic to the project.

Discussion

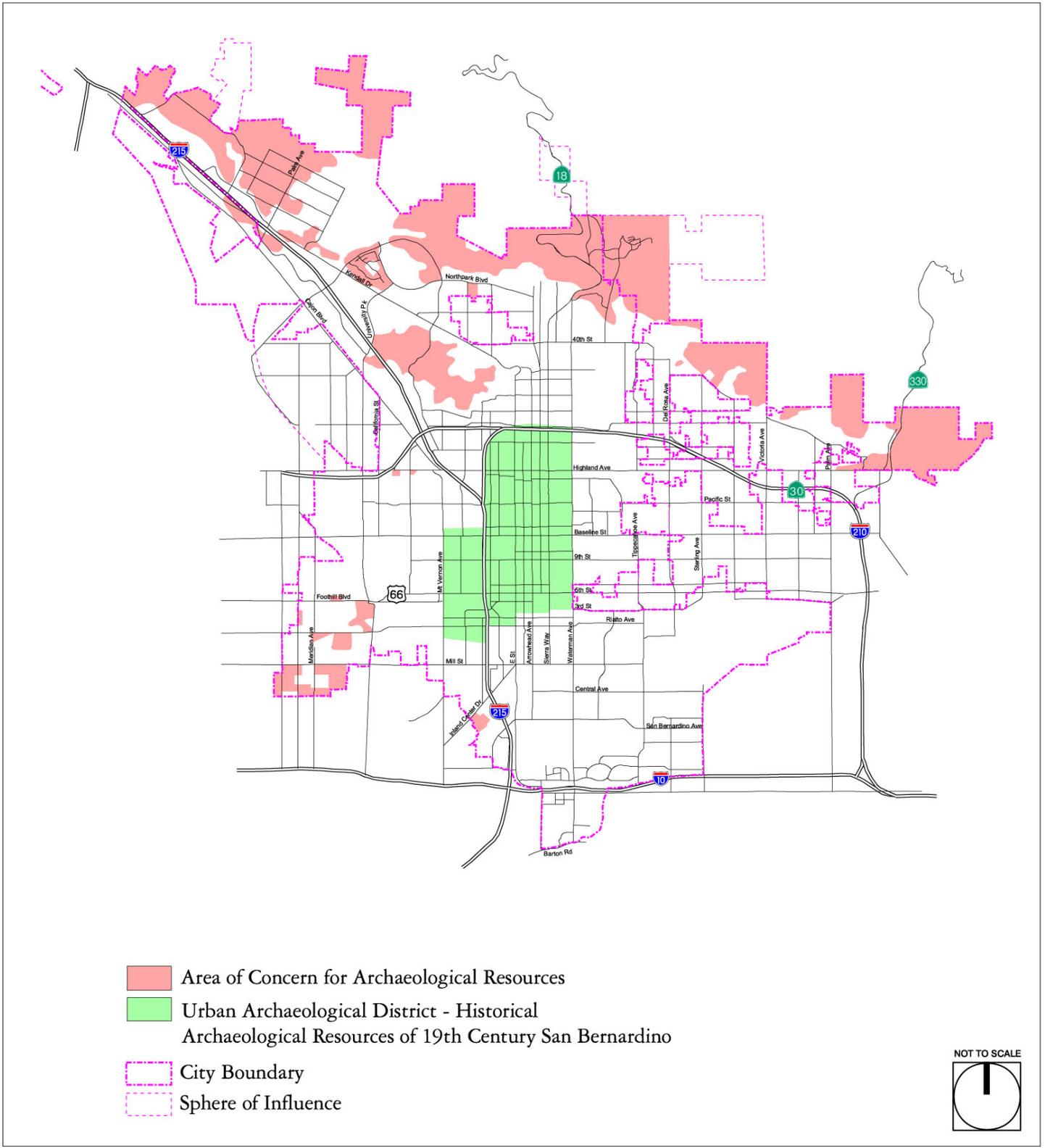
a) Would the project be developed in a sensitive archaeological area as identified in the City’s General Plan?

The project site is not located within a sensitive archeological area as identified in Figure 5.4-2 of the City’s General Plan EIR (see Figure 6 below). Therefore, no impacts are anticipated. (*No Impact*)

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of CEQA?

There are no known archaeological resources present on the surface of the project site, and there are no known subsurface archaeological resources present. No direct impacts to known archaeological resources are anticipated. However, the project area is considered to have a low to moderate sensitivity for the discovery of prehistoric, ethnohistoric, and historic-era cultural resources, and there is potential for the existence of buried or undocumented surface archaeological materials within the project area.

Impact CUL-1: Grading, over excavation, and trenching would be required for foundations and utilities. These activities would likely be up to 10 feet below the existing ground surface. Therefore, buried and previously unknown archaeological resources could be encountered during the construction phase of the project, and the project could cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of CEQA. Mitigation Measure CUL-1 is required to reduce potential impacts in the unlikely event that archaeological resources are encountered during the construction phase. Mitigation Measure CUL-1 would reduce impacts to less than significant



Source: City of San Bernardino General Plan, EIR 2005.

FIGURE 6

ARCHAEOLOGICAL SENSITIVITIES

levels. No additional mitigation measures are proposed and impacts would be less than significant with mitigation. (*Less than significant with mitigation*)

Mitigation Measure CUL-1: On an ongoing basis during the construction phase of the project, a certified archaeologist shall monitor grading and excavation operations for ground-disturbing activities within native soils/sediments only; not in previously disturbed areas. The archeologist should meet the Secretary of the Interior's Standards for archaeologists. In addition, a Native American monitor from a federally-recognized tribe should monitor alongside the certified archaeologist.

In the event that cultural resources are exposed during project implementation, the archeologist must be empowered to temporarily halt construction activities in the immediate vicinity of the discovery while it is evaluated for significance. Construction activities could continue in other areas. If cultural resources are discovered while the archaeologist is not present, work in the immediate area must be halted and the archaeologist notified immediately to evaluate the resource(s) encountered. If any cultural resources discovery proves to be significant, additional work, such as data recovery excavation, may be warranted and would be discussed in consultation with the Housing Authority of the County of San Bernardino (HACSB). Prehistoric or ethnohistoric materials within the project area might include flaked stone tools, tool-making debris, stone milling tools, pottery, culturally modified animal bone, fire-affected rock, or soil darkened by cultural activities (midden). Historical materials might include building remains; metal, glass, or ceramic artifacts; or debris. Artifacts less than 50 years old do not require further work.

c) *Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5 of CEQA?*

Impact CUL-2: Although there are no historical resources on the project site that have been listed in the State Historical Resources Commission or the National Register of Historic Places (NHRP), the Waterman Gardens housing complex has been found eligible for listing in the NHRP. Therefore, the proposed project activities to remove by demolition the existing buildings will be considered an adverse effect. Adverse effects are associated with adverse indirect and/or direct effects which include alteration, physical destruction, removal of a property from its historic location, change in the character or use of a property's physical features within its setting that contributes to a historic properties significance, and introduction of visual changes, shadows, or changes in use that diminish the integrity of the property's significant features. With compliance with Mitigation Measures CUL-2a and 2b however, the impact to historical resources would be less than significant. (*Less than significant with mitigation*)

Mitigation Measure CUL-2a: In the event that activities associated with the proposed project cannot be implemented in a manner that meets adherence to Secretary of the Interior's Standards for the Rehabilitation of Historic Properties, the project proponent/owner shall prepare a Historic American Building Survey (HABS) document pursuant to Section 110(b) of the National Historic Preservation Act (NHPA).

Prior to any action, a Secretary of the Interior-qualified professional photographer shall perform photo documentation and a qualified historian or architectural historian will prepare written documenta-

tion consistent with the standards of the National Parks Service HABS. HABS documentation is described by the National Parks Service as the last means of preserving a historic property. The documentation of a property that is to be demolished preserves its history for future researchers.

The project proponent will be required to prepare a HABS document to create a comprehensive understanding of the resource. The HABS document will consist of the following:

- ◆ All the buildings and structures of Waterman Gardens should be photo documented by a professional photographer familiar with presenting the correct spatial relationship of the individual structures of the resource, and of the resources context to the surrounding landscape. It is recommended that the front and rear elevations of each type of housing unit (A, B, C, D, or E) be photographed. A representative group of photographs (not exceeding eight) should be taken of street viewscapes and of the area between housing units (for example: the area behind the units in Sycamore and Elm Circle). Digital color photographs are recommended with a representative sampling of photographs developed on paper to at least 5" x 7" photographs.
- ◆ HASBC has a digital copy of the full set of the original blueprints of Waterman Gardens dating from 1942. Additional digital copies of the blueprints should be produced to document the physical properties of the housing complex.
- ◆ The text of the Historic Context and Historic Structures Evaluation sections found within Cogstone Historic Resource Evaluation of Waterman Gardens Public Housing Complex should suffice as the written history of Waterman Gardens. The text section of the HABS document should be printed on archivally stable paper.
- ◆ At least four complete copies of the Waterman Gardens HABS document will be prepared. One will be delivered to the California Room at Feldheim Branch of the City of San Bernardino Library. The others will be delivered to the Water Resources Institute at California State University-San Bernardino; the Heritage Room at A.K. Smiley Library, City of Redlands; and Pfau Library Special Collections at California State University-San Bernardino.

Mitigation Measure CUL-2b: In connection with HABS documentation, the project proponent/owner shall develop an interpretive signage concerning the history of Waterman Gardens. The signage would be based on available historic photographs of the housing complex when it was first constructed and the history of the property contained within this report. It is recommended that the signage be located in an interior space open to the public and residents.

d) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The project site is located in an urbanized area which has already experienced a high level of disturbance. There are no known paleontological resources or unique geologic features associated with the project site. Therefore, it is not likely that the project would have direct or indirect impacts on unique paleontological resources or geologic features.

Impact CUL-3: The project may require excavation at depths up to 10 feet below existing ground surface on the project site. Therefore, the project has the potential to destroy buried and unknown, previously undiscovered, subsurface resources during grading and construction of the project. This is

a potentially significant adverse impact of the project. In the unlikely event that unique paleontological resources are encountered during construction, Mitigation Measure CUL-3 could be implemented to reduce impacts to less than significant levels. (*Less than significant with mitigation*)

Mitigation Measure CUL-3: Should resources be unearthed during grading, a vertebrate paleontologist shall be contacted to determine the significance, and make recommendations for appropriate mitigation measures in compliance with CEQA guidelines.

e) *Would the project disturb any human remains, including those interred outside of formal cemeteries?*

There are no known grave sites on the project site, and the disturbance of human remains is not anticipated. However, in the unlikely event that human remains are encountered during construction, the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) and State Health and Safety Code Section 7050.5 would apply. A NAGPRA discovery does not necessarily solely entail human remains; it can include associated or unassociated funerary objects, sacred objects, and cultural patrimony.

According to the provisions of NAGPRA, all work in the immediate vicinity of the discovery must cease, and any necessary steps to insure the integrity of the immediate area must be taken. The HACSB and HUD would be immediately notified. HUD, as managing agency, would be responsible for compliance with NAGPRA. NAGPRA requires federal agencies, such as the NPS, to cease activity around the discovery, protect the items, and provide notice to Native American tribes with an interest in the items and determine final disposition of these items, including, if required, repatriation. As the discovery would also constitute a historic property, consultation under the “discoveries without prior planning” clause of the NHPA would also be required. NHPA requires federal agencies in discovery situations to make reasonable efforts to avoid, minimize, or mitigate adverse effects to such properties and initiate consultation with the State Historic Preservation Officer (SHPO) and Tribal Historic Preservation Officer (THPO) to resolve potential adverse effects. Activities in the area would resume only after proper authorization is received from HUD.

State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The Contractor must notify the County Coroner of any human remains immediately. If the remains are determined to be prehistoric, the Coroner would notify the Native American Heritage Commission (NAHC) which would determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery, and shall complete the inspection within 24 to 48 hours of notification by the NAHC. The MLD would have the opportunity to confer with the property owner on recommendations to the NAHC on the disposition of the remains.

With compliance with the regulations described above, impacts to human remains would be less than significant. (*Less than significant*)

Cultural Resources Mitigation Measures:

CUL-1: On an ongoing basis during the construction phase of the project, the contractor and Project Proponent/Owner shall monitor grading and excavation operations for subsurface archaeological and paleontological resources. If archaeological and/or paleontological resources are encountered, grading operations near these resources shall cease and the contractor shall notify the Planning Division and the Grading Inspector of the find. The Project Proponent/Owner shall provide proof to the City Planning Division that a qualified individual has been hired to determine the significance of the resources and the requirement for further monitoring and proper treatment meeting the intent of §15064.5 of the CEQA Guidelines.

CUL-2a: In the event that activities associated with the proposed project cannot be implemented in a manner that meets adherence to Secretary of the Interior's Standards for the Rehabilitation of Historic Properties, the project proponent/owner shall prepare a Historic American Building Survey (HABS) document pursuant to Section 110(b) of the National Historic Preservation Act (NHPA).

Prior to any action, a Secretary of the Interior-qualified professional photographer shall perform photo documentation and a qualified historian or architectural historian shall prepare written documentation consistent with the standards of the National Parks Service HABS. HABS documentation is described by the National Parks Service as the last means of preserving a historic property. The documentation of a property that is to be demolished preserves its history for future researchers.

The project proponent will be required to prepare a HABS document to create a comprehensive understanding of the resource. The HABS document will consist of the following:

- ◆ All the buildings and structures of Waterman Gardens should be photo documented by a professional photographer familiar with presenting the correct spatial relationship of the individual structures of the resource, and of the resources context to the surrounding landscape. It is recommended that the front and rear elevations of each type of housing unit (A, B, C, D, or E) be photographed. A representative group of photographs (not exceeding eight) should be taken of street views and of the area between housing units (for example: the area behind the units in Sycamore and Elm Circle). Digital color photographs are recommended with a representative sampling of photographs developed on paper to at least 5" x 7" photographs.
- ◆ HASBC has a digital copy of the full set of the original blueprints of Waterman Gardens dating from 1942. Additional digital copies of the blueprints should be produced to document the physical properties of the housing complex.
- ◆ The text of the Historic Context and Historic Structures Evaluation sections found within Cogstone Historic Resource Evaluation of Waterman Gardens Public Housing Complex should suffice as the written history of Waterman Gardens. The text section of the HABS document should be printed on archivally-stable paper.
- ◆ At least four complete copies of the Waterman Gardens HABS document shall be prepared. One shall be delivered to the California Room at Feldheim Branch of the City of San Bernardino Library. The others shall be delivered to the Water Resources Institute at California State University-San Bernardino; the Heritage Room at A.K. Smiley Library, City of Redlands; and Pfau Library Special Collections at California State University-San Bernardino.

CUL-2b: In connection with HABS documentation, the project proponent/owner shall develop an interpretive signage concerning the history of Waterman Gardens. The signage would be based on available historic photographs of the housing complex when it was first constructed and the history of the property contained within this report. It is recommended that the signage be located in an interior space open to the public and residents.

CUL-3: Should resources be unearthed during grading, a vertebrate paleontologist shall be contacted to determine the significance, and make recommendations for appropriate mitigation measures in compliance with CEQA guidelines.

VI. GEOLOGY AND SOILS

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Involve earth movement (cut and/or fill) based on information included in the Project Description Form?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving: rupture of a known earthquake fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; and/or landslides, mudslides, or other similar hazards?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located within an Alquist-Priolo Earthquake Fault Zone?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Be located within an area subject to landslides, mudslides, subsidence, or other similar hazards as identified in the City's General Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Be located within an area subject to liquefaction as identified in the City's General Plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Modify any unique physical feature based on a site survey/evaluation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Result in erosion, dust, or unstable soil conditions from excavation, grading, fill, or other construction activities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

The following discussion of existing conditions is based on the Engineering Geology Investigation prepared by C.H.J. Inc. in December 2010 (Appendix D). The purpose of the investigation was to evaluate the engineering geologic conditions at the project site and to address the engineering geologic concerns and hazards to the project. The investigation included a review of published and unpublished literature and maps, review and analysis of aerial photographs, a geologic field reconnaissance of the site and surrounding area, review of pertinent geotechnical investigations performed on sites in the close vicinity, and an evaluation of the geologic data to develop site-specific recommendations for the redevelopment of the site.

The terrain of the project site is generally flat and underlain by mid Holocene age alluvial fan deposits and Pleistocene age alluvial deposits consisting primarily of clayey sand and cemented gravel. The project site is not located within an Alquist-Priolo Earthquake Fault Zone and the closest Alquist-Priolo Earthquake Fault Zone is associated with the San Jacinto fault, located southwest of the site. More large historic earthquakes have occurred on the San Jacinto fault than any other fault in Southern California. The San Bernardino segment of this fault zone is located approximately 2-¾ miles southwest of the project site. The San Jacinto Valley segment of the San Jacinto fault zone is located approximately 11 miles southeast of the site. The Working Group on California Earthquake Proba-

bilities tentatively assigned a 43 percent (± 17 percent) probability of a major earthquake on the San Jacinto Valley segment of the San Jacinto fault for the 30-year interval from 1994 to 2024.

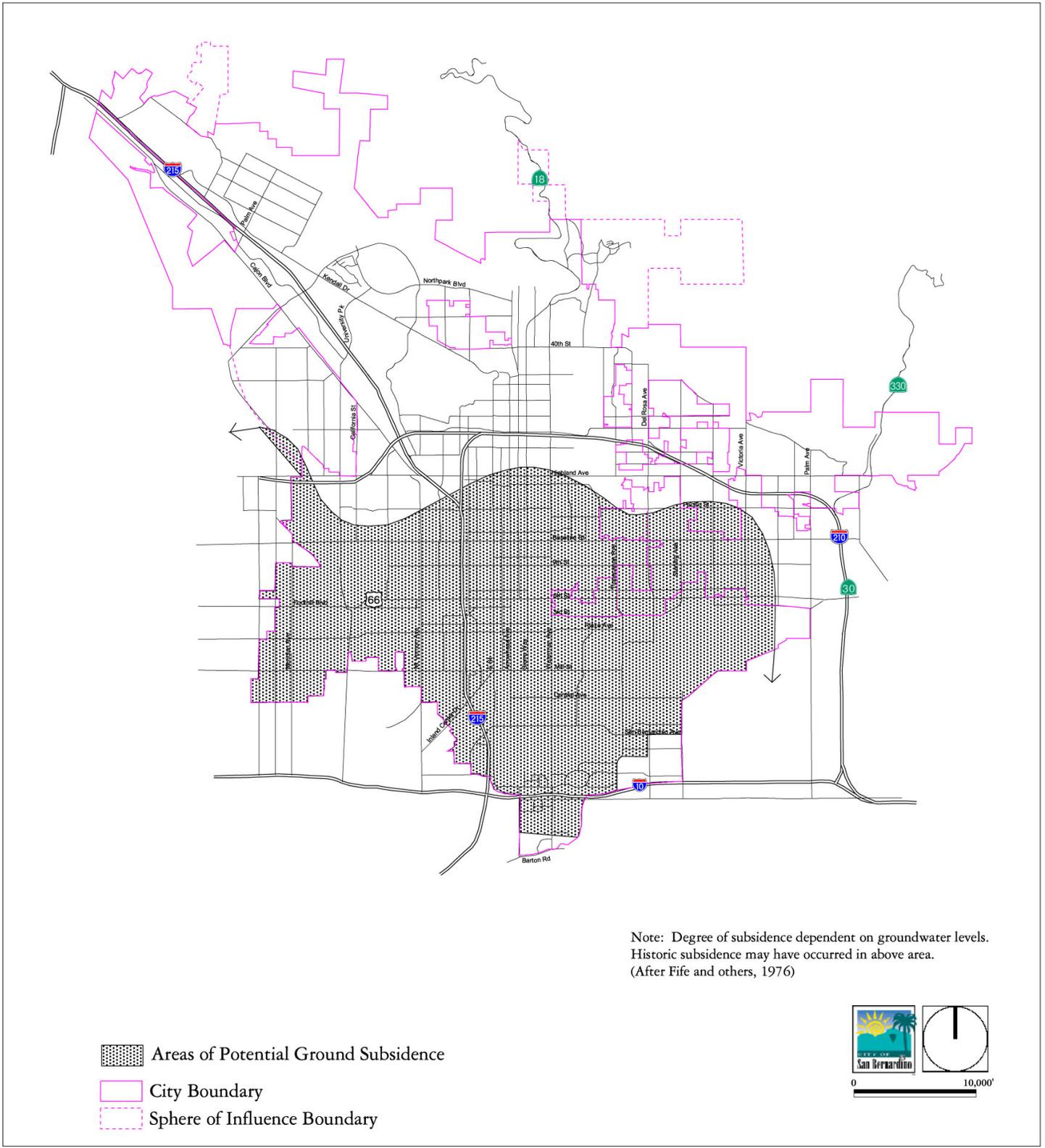
The San Andreas fault zone is located along the southwest margin of the San Bernardino Mountains, approximately $3\frac{1}{4}$ miles northeast of the project site. The San Andreas fault and the San Jacinto fault pose the greatest seismic shaking hazard to the site. The Working Group on California Earthquake Probabilities tentatively assigned a 28 percent (± 13 percent) probability to a major earthquake occurring on the San Bernardino Mountains segment of the San Andreas Fault between 1994 and 2024.

The southern margin of the San Gabriel Mountains is coincident with a series of east-west trending, predominantly reverse, and thrust faults known as the Transverse Ranges frontal fault system. The San Fernando fault of this system ruptured during the 1971 magnitude (M) 6.7 San Fernando earthquake. The Cucamonga fault of this system is located at the base of the San Gabriel Mountains, approximately $9\frac{1}{2}$ miles northwest of the project site. The mapped trace of the Loma Linda fault is located approximately $3\frac{1}{2}$ miles south of the project site. The Loma Linda fault is not considered to represent a significant seismic hazard to the project site.

Based on the nature of the underlying geologic materials, the gentle site topography, and the lack of visible evidence, landsliding is not anticipated to be a hazard to the project. Figure S-6 of the General Plan indicates that the site and most of the southern portion of the City is in an area with high potential for subsidence (see Figure 7 below). Subsidence involves reduced ground elevations from natural and manmade activities. Historically the area has been subjected to subsidence from groundwater extraction associated with groundwater pumping from aquifers. Subsidence leads to permanent loss of aquifer capacity and can cause structural damage to buildings and paved areas. The water district has implemented aquifer extraction and recharge strategies which have stabilized subsidence in this area.

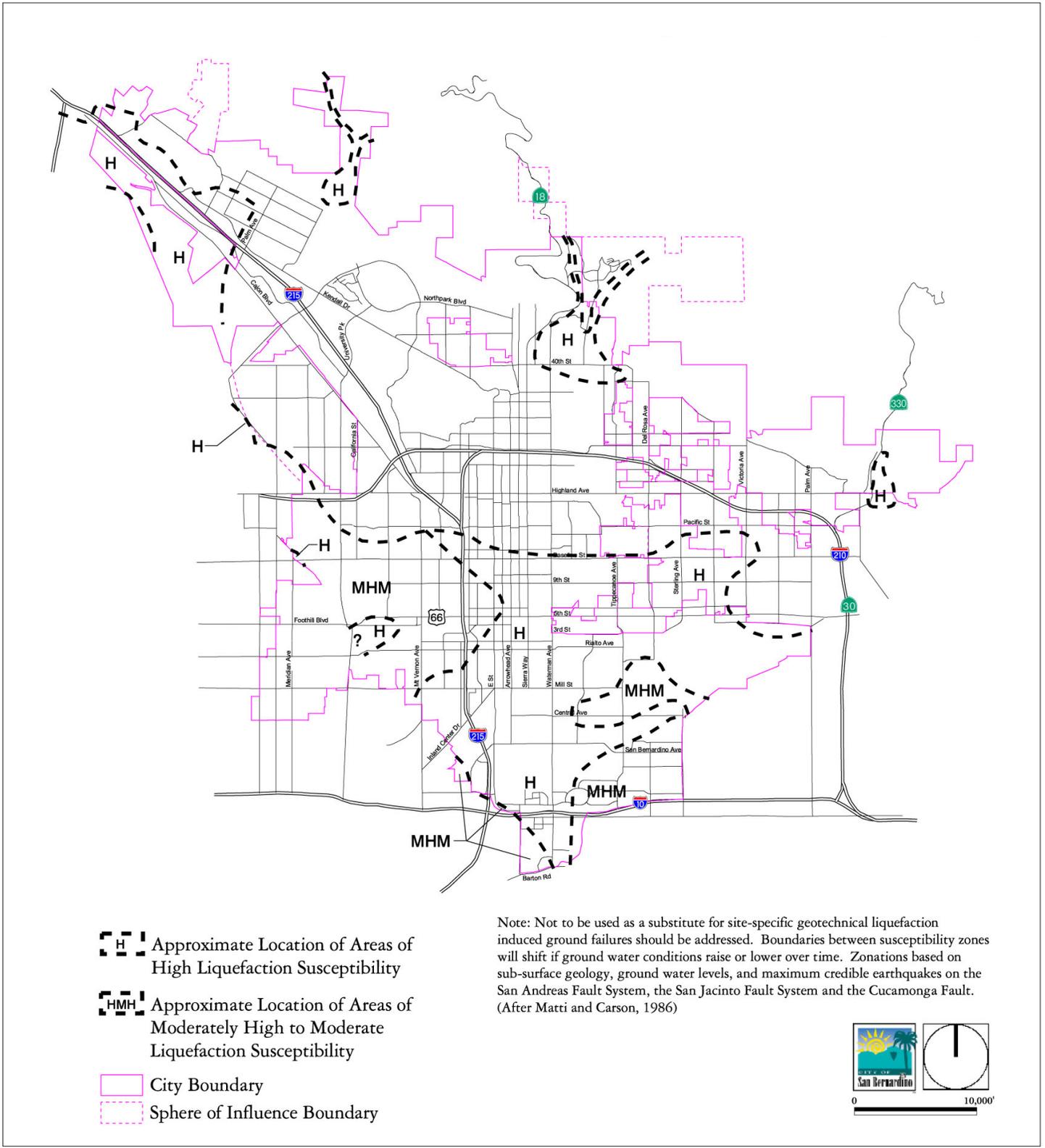
The project site is located within an area with high liquefaction potential, as shown in General Plan Figure S-5 (see Figure 8 below). Soil liquefaction is a state of soil particles suspension caused by a complete loss of strength when the effective stress drops to zero. Liquefaction can occur as a secondary seismic hazard in areas subject to strong ground shaking where granular soils and high groundwater conditions are present. As described in the geotechnical study, the minimum depth to groundwater in the area of the site was approximately 40 feet below grade for the time period from 1973 to 1983. The current depth to groundwater is estimated to be approximately 200 feet based on data from State Well No. 01S/04W-02D006S, located on or near the site. This measurement is from a deep well that may or may not reflect static water levels in the upper, unconfined aquifer at the site. Therefore, shallow groundwater levels may be present.

The City's Building Code (Title 15 of the City of San Bernardino Municipal Code) establishes administrative procedures, regulations, required approvals, and performance standards for the erection, construction, alteration, repair, removal, and maintenance of all buildings and other structures in the City. The intent of the code is to provide minimum standards to safeguard life or limb, health, property and public welfare by regulating and controlling the design, construction, quality or materials, use and occupancy, location and maintenance of all buildings and structures within the City.



Source: City of San Bernardino General Plan, 2005.

FIGURE 7
POTENTIAL SUBSIDENCE AREAS



Source: City of San Bernardino General Plan, 2005.

FIGURE 8

LIQUEFACTION SUSCEPTIBILITY

The California Building Code (CBC) is another name for the body of regulations known as the California Code of Regulations (C.C.R.), Title 24, Part 2, which is a portion of the California Building Standards Code. Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under State law, all building standards must be centralized in Title 24 or they are not enforceable. Published by the International Code Council (ICC), the International Building Code is a widely adopted model building code in the United States. The CBC incorporates by reference the International Building Code with necessary California amendments. About one-third of the text within the CBC has been tailored for California earthquake conditions.

Discussion

a) *Would the project involve earth movement (cut and/or fill) based on information included in the Project Description Form?*

Moderate site preparation and grading are expected with the proposed development. A total of 30,000 cubic yards of cut and 50,000 cubic yards of fill are proposed as part of the project, resulting in a total change of 20,000 cubic yards of fill. The site is relatively flat and proposed grading would not result in significantly altered grades. The maximum cut and fill depths are 3 feet on most parts of the site, with the exception of the four detention basins, where the maximum depth will be 6 feet. The impacts associated with earth movement on the site are anticipated to be less than significant. (*Less than significant*)

b) *Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; and/or landslides, mudslides, or other similar hazards?*

Impact GEO-1: Earthquakes, due to their ground acceleration and shifting, can cause major damage to buildings and create dangerous hazards to people through injury or death. As concluded in the geotechnical investigation, severe seismic shaking of the project site can be expected during the lifetime of the proposed structures, due to the proximity of the San Jacinto, San Andreas, San Bernardino, and Cucamonga faults. As described in existing conditions, the San Jacinto and San Andreas faults pose the greatest risk for seismic shaking of the project site. Development on the project site must mitigate these potential hazards through strict adherence to the California Building Code (CBC) and recommendations by geotechnical engineers.

The project site is also potentially subject to liquefaction and has the potential to cause adverse impacts including risk of loss, injury or death. As concluded in the geotechnical investigation, conditions conducive to landsliding are not present at the site. Mitigation Measures GEO-1a through 1h, are recommended to minimize structural damage on the project site due to strong seismic ground shaking and associated liquefaction.

With compliance with the CBC and Mitigation Measures GEO-1a through 1h, the impacts would be less than significant. (*Less than significant with mitigation*)

Mitigation Measure GEO-1a: Prior to issuance of Grading Permits, a licensed geotechnical consultant shall review the final grading and foundation plans to finalize the geotechnical recommendations

for the project. Said recommendations shall be incorporated into the plans for the project as notes and specifications, which shall be verified during plan check by the City of San Bernardino Engineering and Building Department.

Mitigation Measure GEO-1b: Ongoing during rough grading, areas of active grading shall be tested and field monitored by a qualified geotechnical consultant pursuant to the final geotechnical recommendations. Said monitoring and testing shall be documented in a log and shall remain on-site during the construction phase for review by the City Inspector.

Mitigation Measure GEO-1c: To minimize post-construction soil movement and to maintain the seismic-induced settlement within tolerable limits, it is recommended that at least 5 feet below the base of the footings and the slab system be excavated, moisture-conditioned as necessary, and re-compacted to a minimum of 90 percent of maximum density based on ASTM D1557 Test Method.

Mitigation Measure GEO-1d: A representative of the geotechnical engineering firm will be present during all site clearing and grading operations to test and observe earthwork construction. The geotechnical engineer will reject any material that does not meet compaction and stability requirements.

Mitigation Measure GEO-1e: Prior to issuance of permits, project plans shall include the geotechnical engineer's recommended treatment of fill material as a note. The potential for structural damage at the site can be minimized by constructing the proposed building on compacted fill. For preliminary planning purposes, a remedial removal depth of 36 inches could be utilized in building pad areas. Remedial removals should include all existing fill and any native materials deemed geotechnically unsuitable for support of structures and fill.

Mitigation Measure GEO-1f: To minimize the potential soil movement, the upper 18 inches of soil within building or exterior flatwork areas should be non-expansive fill. The fill material should be a well-graded silty sand or sandy silt soil. A clean sand or very sandy soil is not acceptable for this purpose.

Mitigation Measure GEO-1g: The replacement soils should extend 5 feet beyond the perimeter of the building. The nonexpansive replacement soil should be compacted to at least 90 percent relative compaction based on ASTM D1557 Test Method. The exposed native soils in the excavation should not be allowed to dry out and should be continuously moist prior to backfilling. Also slab-on-grade continuous footings shall be nominally reinforced to minimize cracking and vertical off-set.

Mitigation Measure GEO-1h: Prior to the placement of non-expansive Engineered Fill, the exposed Sub-grade in building pad, exterior flatwork, and pavement areas shall be scarified to a depth of 12 inches, worked until uniform and free from large clods, moisture-conditioned to at least 2 percent above optimum moisture, and re-compacted to a minimum of 90 percent of maximum density based on ASTM D1557 Test Method. Over-saturated soils shall be allowed to dry to approximately 2 percent above optimum moisture before re-compaction.

c) *Would the project be located within an Alquist-Priolo Earthquake Fault Zone?*

The project site is not located within an Alquist-Priolo Earthquake Fault Zone. Therefore, no impact is anticipated. (*No impact*)

d) *Would the project result in substantial soil erosion or the loss of topsoil?*

Impact GEO-2: As described in the geotechnical study, the surficial native materials at the site are mapped as mid Holocene age alluvial fan deposits of sand and cobbly alluvium and Pleistocene age alluvial deposits consisting primarily of clayey sand and cemented gravel. Implementation of mitigation measures GEO-2a and 2b would ensure no unstable soil conditions would occur due to excavation, grading, or fill activities. However, during the construction phase, project dust may be generated due to the operation of machinery on-site or due to high winds. Additionally, erosion of soils could occur due to a storm event. The City's administrative review process for issuance of Grading Permits requires a Storm Water Pollution Prevention Program (SWPPP) approved by the City as well as a Fugitive Dust Emissions Control Plan approved by the South Coast Air Quality Management District prior to issuance of Grading Permits. These plans include Best Management Practices such as regular sweeping of track-out areas, covering haul loads, use of sand bags and silt fences, and regular watering of surface soils during active grading. These practices would be implemented during the construction phase and field verified by the City Inspector. Implementation of Mitigation Measures GEO-2a and 2b and the City's administrative review process for Grading Permits will reduce soil erosion during construction to less than significant levels. (*Less than significant with mitigation*)

Mitigation Measure GEO-2a: Dewatering waterproofing will be required should structures or excavations extend below the groundwater table. If groundwater is encountered, a geotechnical engineering firm shall be consulted prior to dewatering the site.

Mitigation Measure GEO-2b: Project site winterization consisting of placement of aggregate base and protecting exposed soils during construction shall be performed.

e) *Would the project be located within an area subject to landslides, mudslides, subsidence, or other similar hazards as identified in the City's General Plan?*

As described above in existing conditions, landslides are not anticipated to be a hazard to the project site. The project site is located within an area identified in the General Plan as having potential for subsidence. However, the risk of subsidence is not anticipated to be significant given the aquifer extraction and recharge strategies implemented by the water district, which have stabilized subsidence in the area and will continue to maintain aquifer capacity in this way. Therefore, impacts to the project are anticipated to be less than significant. (*Less than significant*)

f) *Would the project be located within an area subject to liquefaction as identified in the City's General Plan?*

The project site is located within an area with high liquefaction potential, as described in existing conditions. Liquefaction could result in structural damage and other hazards on the project site. The project would require minimal grading, excavation, backfill, and site preparation, which is tailored to the specific subsurface conditions of the site and safety criteria of the CBC and the City's Engineering De-

sign Manual. In addition, grading and site preparation activities would be tailored to the soils and sub-surface conditions of the project site, pursuant to Mitigation Measures GEO-1a and 1h, for the project. Mitigation Measure GEO-2a will be required should structures or excavations extend below the groundwater table. Therefore, impacts would be less than significant with mitigation. (*Less than significant with mitigation*)

g) *Would the project modify any unique physical feature based on a site survey/evaluation?*

Based on the site reconnaissance conducted by LSA staff on December 14, 2010, there are no unique physical features located on the project site. The project would involve grading but would not result in significantly altered grades from existing conditions at the project site. Therefore, no impacts are anticipated. (*No impact*)

h) *Would the project result in erosion, dust, or unstable soil conditions from excavating, grading, fill, or other construction activities?*

Refer to Responses VI a. and VI d. above. The project would result in temporarily increased potential for erosion, dust, or unstable soils conditions from excavation, fill or other construction activities. The upper soils, during wet winter months, become moist due to the absorption characteristics of the soil, and earthwork operations performed during winter months may encounter very moist, unstable soils. Therefore, Mitigation Measure GEO-2b, project site winterization consisting of placement of aggregate base and protecting exposed soils during construction is recommended. Once the construction phase is complete, this impact would be reduced to less than significance. Upon project completion, the surface of the site would be stabilized with paved surfaces, reestablished crust on undeveloped areas, and landscaping. Implementation of the SWPPP and WQMP for the project, as well as Mitigation Measures GEO-1a through 2b, will reduce impacts to less than significant. (*Less than significant with mitigation*)

Geology and Soils Mitigation Measures:

GEO-1a: Prior to issuance of Grading Permits, a licensed geotechnical consultant shall review the final grading and foundation plans to finalize the geotechnical recommendations for the project. Said recommendations shall be incorporated into the plans for the project as notes and specifications, which shall be verified during plan check by the City of San Bernardino Engineering and Building Department.

GEO-1b: Ongoing during rough grading, areas of active grading shall be tested and field monitored by a qualified geotechnical consultant pursuant to the final geotechnical recommendations. Said monitoring and testing shall be documented in a log and shall remain on-site during the construction phase for review by the City Inspector.

GEO-1c: To minimize post-construction soil movement and to maintain the seismic-induced settlement within tolerable limits, it is recommended that at least 5 feet below the base of the footings and the slab system be excavated, moisture-conditioned as necessary, and recompacted to a minimum of 90 percent of maximum density based on ASTM D1557 Test Method.

GEO-1d: A representative of the geotechnical engineering firm will be present during all site clearing and grading operations to test and observe earthwork construction. The geotechnical engineer will reject any material that does not meet compaction and stability requirements.

GEO-1e: Prior to issuance of permits project plans shall include the geotechnical engineer's recommended treatment of fill material as a note. The potential for structural damage at the site can be minimized by constructing the proposed building on compacted fill. For preliminary planning purposes, a remedial removal depth of 36 inches could be utilized in building pad areas. Remedial removals should include all existing fill and any native materials deemed geotechnically unsuitable for support of structures and fill.

GEO-1f: To minimize the potential soil movement, the upper 18 inches of soil within building or exterior flatwork areas should be non-expansive fill. The fill material should be a well-graded silty sand or sandy silt soil. A clean sand or very sandy soil is not acceptable for this purpose.

GEO-1g: The replacement soils should extend 5 feet beyond the perimeter of the building. The non-expansive replacement soil should be compacted to at least 90 percent relative compaction based on ASTM D1557 Test Method. The exposed native soils in the excavation should not be allowed to dry out and should be continuously moist prior to backfilling. Also slab-on-grade continuous footings shall be nominally reinforced to minimize cracking and vertical off-set.

GEO-1h: Prior to the placement of non-expansive Engineered Fill, the exposed Sub-grade in building pad, exterior flatwork, and pavement areas shall be scarified to a depth of 12 inches, worked until uniform and free from large clods, moisture-conditioned to at least 2 percent above optimum moisture, and re-compacted to a minimum of 90 percent of maximum density based on ASTM D1557 Test Method. Over-saturated soils shall be allowed to dry to approximately 2 percent above optimum moisture before re-compaction.

GEO-2a: Dewatering waterproofing shall be required should structures or excavations extend below the groundwater table. If groundwater is encountered, geotechnical engineering firm shall be consulted prior to dewatering the site.

GEO-2b: Project site winterization consisting of placement of aggregate base and protecting exposed soils during construction shall be performed.

VII. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous material 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 living or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people living or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

The following discussion is based on the Phase I Environmental Assessment prepared by LSA Associates, Inc., dated December 2010 (Appendix E).

The 38-acre project site is currently occupied by multi-family apartment buildings, a maintenance building, a public recreational area, several day-care facilities, a community center, and an administrative office building. The site and its surrounding areas are zoned as Residential Medium (RM), Commercial Heavy (CH), Commercial General (CG), and Residential Urban (RU). Existing land uses adjacent to the site include: commercial buildings to the north; an orange orchard and an orange juice manufacturing factory to the east; a gas station, a discount mall, and several retail stores to the south; and fast food restaurants and retail stores to the west.

Regulatory search information was prepared by Track Info Services, LLC (Track Info). The search radii met the criteria specified in the ASTM Practice E 1527-05 (Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process). Regulatory listings include only those facilities that are known to the regulatory agencies at the time of publication. A regulatory records search of this nature is based on information published by federal, State, and local regulatory agencies and is used to determine whether the subject property or nearby properties are listed as having a past or present record of actual or potential environmental impacts from hazardous substances or materials. According to the Track Info report, a total of three Resource Conservation and Recovery Act (RCRA) Generators (GEN) listing sites and one RCRA No Longer Reporting (NLR) listed at the same address as one of the RCRA GEN sites are listed as small quantity generators (SQGs). These sites are not considered potential concerns because the databases do not indicate that any accidental release of hazardous materials occurred. In addition, no violations were reported at these sites.

During the visual site survey, performed by LSA on December 14, 2010, no evidence of spills, accidental releases, or illegal dumping of hazardous substances was observed. However, existing buildings were constructed prior to 1978, which indicates a potential for the presence of lead-based paint (LBP) and asbestos-containing materials (ACMs). Additionally, a hazardous material storage and waste shed is located at the northeast corner of the existing maintenance building. Containers of paint and paint thinner were observed in this shed at the time of the site reconnaissance. The containers were labeled and observed to be in good condition. No present above-ground storage tanks (ASTs) or underground storage tanks (USTs) were observed at the time of the site reconnaissance.

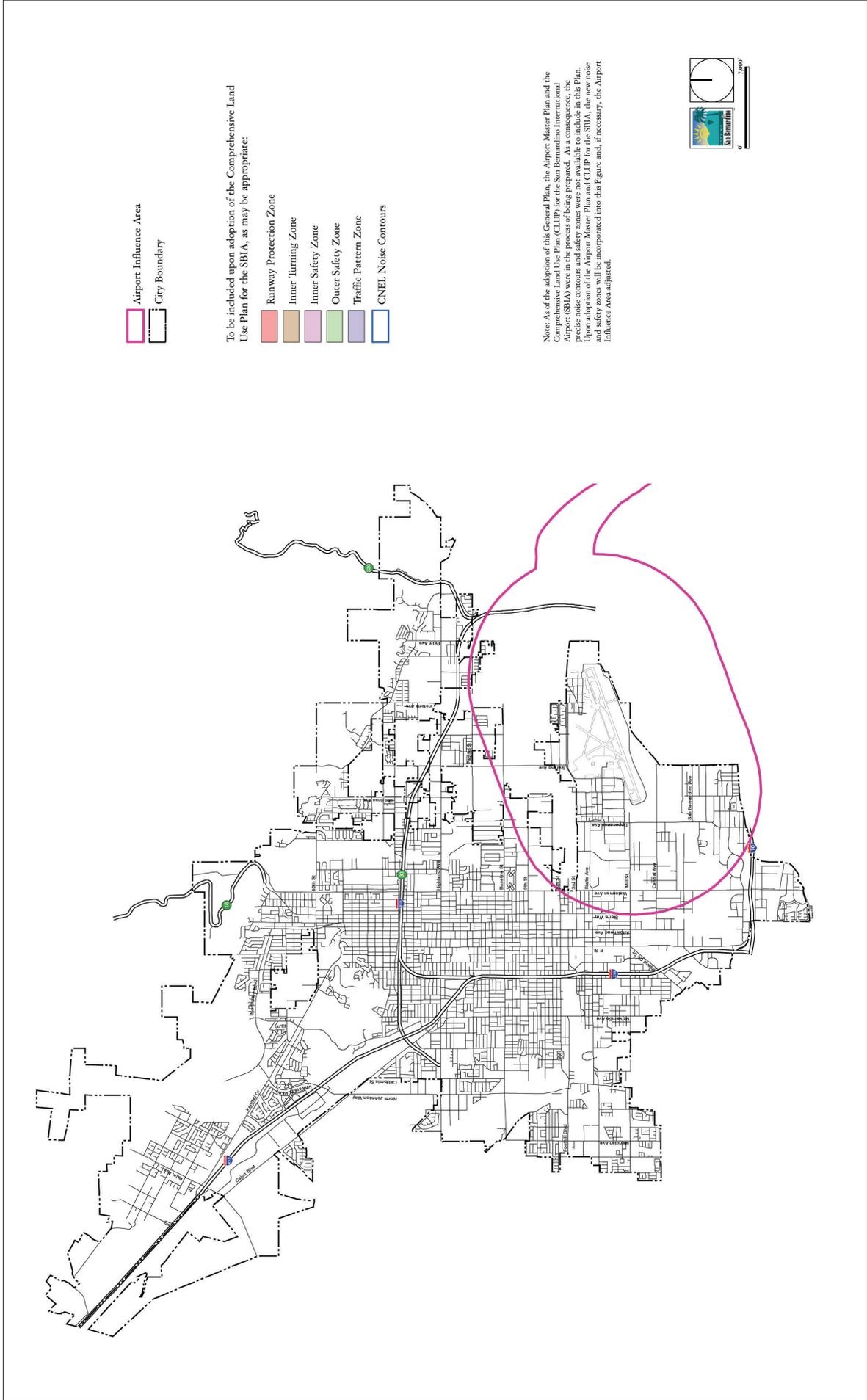
A number of schools are located near the project site. Bradley Elementary, the Adult School/E. Neil Roberts Elementary, and Sierra High School are all located within ¼ mile of the site. As shown in Figure LU-4 of the City's General Plan, the project site does not occur within the San Bernardino International Airport (SBIA) Influence Area (see Figure 9 below).²⁵ In addition, there are no private airstrips within the vicinity of the project site. As shown on Figure S-9 in the City's General Plan, the project site is not located within a fire hazard area (see Figure 10 below).

Hazardous Materials are regulated through the enforcement of federal and State standards established for maintenance of public safety. The Federal Solid Waste Disposal Act and the Comprehensive Environmental Response Compensation and Liability Act are enforced by the EPA. The California Hazardous Waste Control Act of 1973 is enforced by the State. The San Bernardino County Fire Department is responsible for implementing the County Hazardous Waste Management Plan in the City of San Bernardino. This plan establishes regulations at the local level for the creation, storage, and handling of hazardous waste material.²⁶

The California Emergency Services Act requires the City to manage and coordinate the overall emergency and recovery activities within its jurisdictional boundaries. The City's Emergency Operations Plan includes policies and procedures to be administered by the City in the event of a disaster. During

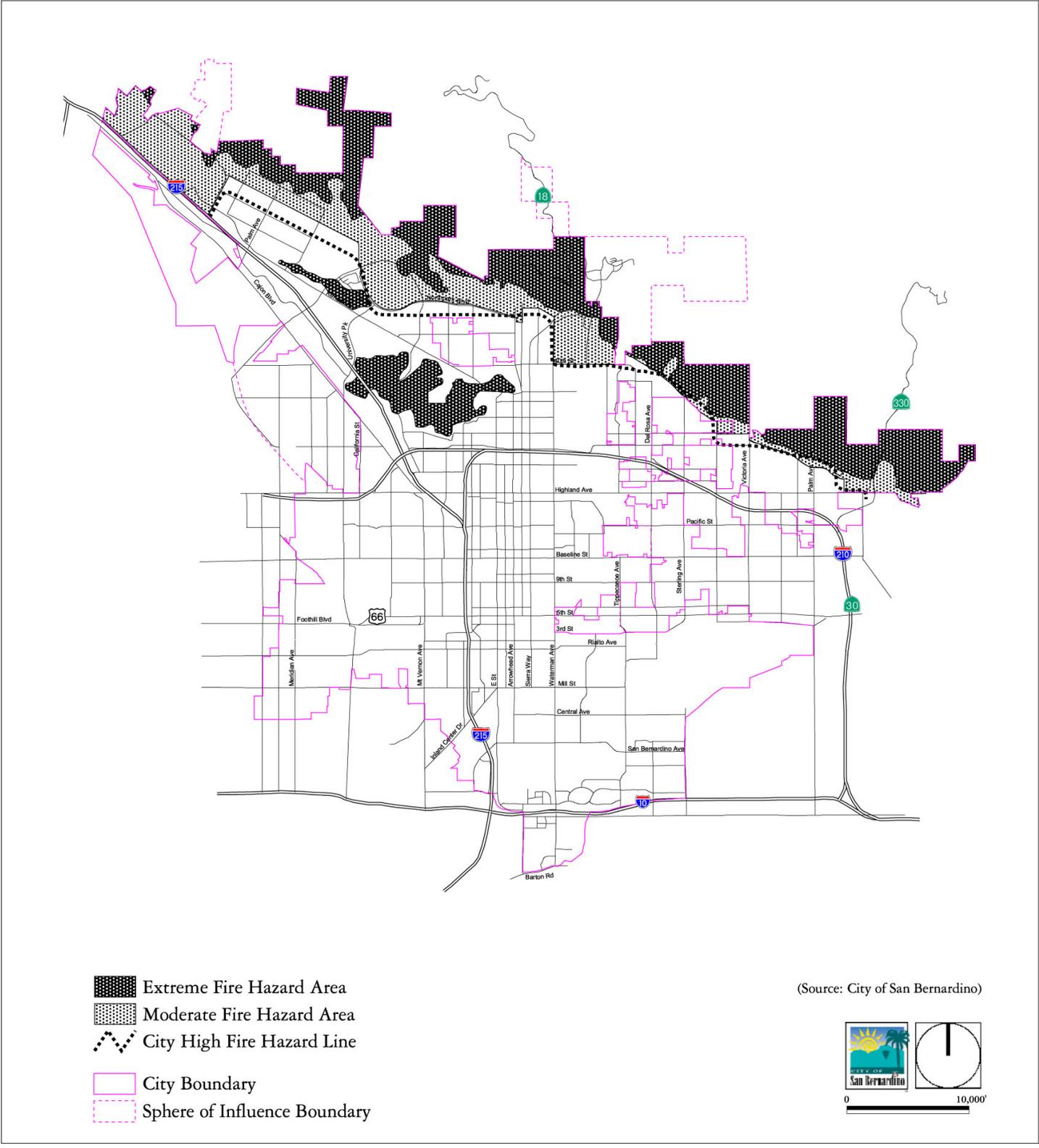
²⁵ City of San Bernardino, 2005, *General Plan*, page 2-47.

²⁶ City of San Bernardino, 2005, *General Plan*, page 10-4.



Source: City of San Bernardino General Plan, 2005.

FIGURE 9
SAN BERNARDINO INTERNATIONAL AIRPORT PLANNING BOUNDARIES



(Source: City of San Bernardino)



Source: City of San Bernardino General Plan, 2005.

FIGURE 10
FIRE HAZARD AREAS

disasters, the City is required to coordinate emergency operations with the County of San Bernardino.²⁷

Discussion

a) *Would the project create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?*

Impact HAZ-1: The proposed project does not include land improvements for treatment, routine transfer, storage, resource recovery, disposal, or recycling of hazardous waste and is not a Hazardous Waste Facility pursuant to Chapter 17.04 of the City's Municipal Code. However, due to the age of the existing structures on the project site, there is a potential of encountering asbestos-containing materials (ACMs), lead-based paint (LBP), and polychlorinated-biphenyl- (PCB) containing equipment during demolition and transport of demolition materials. The presence of these materials would be evaluated and local, State and federal requirements for proper abatement and removal of these materials would be assessed prior to structure disturbance pursuant to Mitigation Measures HAZ-1a and HAZ-1b.

During construction and long-term operation, the proposed project would include activities involving use, handling and storage of small quantities of hazardous materials such as paints, solvents, adhesives, fuels, fertilizers, and cleaning products used for building construction and for maintenance. These activities are regulated by the City Fire Department, County Fire Department, the California EPA, California Department of Toxic Substances Control, and the Regional Water Quality Control Board. Project compliance is achieved through implementation of the County of San Bernardino Hazardous Waste Management Plan and would be enforced through the County of San Bernardino's administrative review, permit, and inspection procedures. Project compliance with these procedures would ensure that the proposed project would not create a significant hazard to the public or the environment from transport, use or disposal of hazardous materials. For the reasons stated above, impacts are anticipated to be less than significant with mitigation. (*Less than significant with mitigation*)

Mitigation Measure HAZ-1a: Prior to structure disturbance, a State-certified asbestos professional and State-certified lead professional should survey the site structures and determine whether sampling of building materials for ACMs and LBP is warranted. Any abatement or removal of ACMs and LBP shall be performed in accordance with applicable federal, State, and local regulations.

Mitigation Measure HAZ-1b: Prior to structure disturbance, a qualified professional should survey the site structures and determine whether suspect PCB-containing equipment is present. PCB-containing equipment must be handled and disposed of in accordance with applicable federal, State, and local regulations.

²⁷ San Bernardino County Fire Department, *Office of Emergency Services Website*, <http://www.sbcfire.org/oes/>, accessed on May 2, 2011.

b) *Would the project 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?*

Impact HAZ-2: Refer to Response VII a. Hazardous Materials are regulated through the enforcement of federal and State standards established for maintenance of public safety. During grading and subsurface excavations for utilities and foundations, contaminated soils may be encountered. Implementation of Mitigation Measure HAZ-2 would require testing for contamination in excavated materials and proper disposal based on test results and would reduce potential impacts to less than significance.

Furthermore, project construction would involve handling, use and storage of small quantities of hazardous materials. Handling, use, and storage of such materials are regulated through the enforcement of the County's Waste Management Plan and through implementation of OSHA standards by the contractor. Special permits are required for large quantities of hazardous materials used on the project site and would be issued by the City Planning Division and City Fire Department.

Long-term operations associated with equipment and property maintenance may require small quantities of hazardous materials. Therefore small quantities of hazardous materials may be stored and handled on-site during the life of the project. Project plans, including use and storage of hazardous materials, are subject to review and approval by the City of San Bernardino Fire Department and the City Planning Division prior to issuance of Building Permits. At the time of building permit issuance, the City will verify that the project design incorporates a contingency plan for on-site storage of both non-hazardous and hazardous materials pursuant to Materials Safety Data Sheets. Furthermore, a Water Quality Management Plan (WQMP) has been prepared for the project that includes stipulations for proper handling, storage, and disposal of hazardous substances (Appendix J). The standard application of the City's Municipal Code ensures that the WQMP includes Best Management Practices, structural and non-structural measures, to prevent off-site transport of materials and substances, for both hazardous and non-hazardous materials. Likewise, the standard application of the City's Municipal Code requires that the WQMP include structural BMPs and an operation and maintenance program for proper handling and storage of chemicals, reducing pollutants from the project over the long term. Therefore, materials storage and use on site would be implemented pursuant to City, State, and federal standards for hazardous materials.

For the reasons stated above, project impacts would be less than significant with mitigation. (*Less than significant with mitigation*)

Mitigation Measure HAZ-2: Prior to issuance of Grading Permits, the City Engineer shall require soils samples and testing for contamination in areas shown on the Grading Plan where soils will be excavated. The Grading Plan for the project shall include a note requiring testing for contamination as well as proper disposal based on test results.

c) *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?*

Refer to responses VII a. and b. While there are a number of schools located within a quarter mile of the project site, including Bradley Elementary, the Adult School/E. Neil Roberts Elementary, and Sierra High School, the proposed project is not anticipated to emit hazardous emissions or handle

hazardous or acutely hazardous materials, substances or waste within one-quarter mile of the existing schools. Implementation of Mitigation Measures HAZ-1a, 1b, and 2 will reduce the significance of potential impacts of the proposed project on nearby schools to less than significant. Therefore, the impacts are anticipated to be less than significant. (*Less than significant*)

d) Would the project be located on a site which is included on a list of hazardous material 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?

The project site does not occur on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and therefore would not create a significant hazard to the public or the environment. Additionally, no use of hazardous materials was observed at the site during a site visit conducted on December 14, 2010. Therefore, no impacts are anticipated. (*No impact*)

e) For a project 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 living or working in the project area?

As shown in Figure LU-4 of the City's General Plan (see Figure 9 above), the project site does not occur within the San Bernardino International Airport (SBIA) Influence Area and the project would not result in a safety hazard for people living or working in the project area. Therefore, no impacts are anticipated. (*No impact*)

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people living or working in the project area?

The project site is not within the vicinity of a private airstrip and the project would not result in a safety hazard for people living or working in the project area. Therefore, no impacts are anticipated. (*No impact*)

g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Policies within the City's General Plan and updates to the City's Emergency Plan, as required by State law, would ensure the proposed project would not interfere with an adopted emergency response plan or emergency evacuation plan. In addition, the proposed project has a high level of internal accessibility. The various project driveways connect into the site terminating at an internal ring roadway which provides access to individual properties within the site. Therefore, it is considered that emergency vehicles can easily travel while inside the project boundary using the internal ring road.

Entryway construction would involve equipment and construction vehicles and work within the public right-of-way involving temporary lane closure. Therefore the construction of the project may temporarily impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The project would require Encroachment Permits for work done within the public right-of-way in Waterman Avenue, Olive Street, Baseline Street and La Junita Street, and a Traffic Detour Plan will be prepared for the project pursuant to Title 12 of the City of San Bernardino's Municipal Code. The Traffic Detour Plan would be designed and implemented pursuant to

City standards for safe access and would provide adequate circulation for emergency response and emergency evacuation on a short-term basis.

Once the project is complete it would include circulation and access meeting the City's standards and no long term impacts are anticipated. The proposed street pattern will improve emergency vehicle access by providing additional access points from the surrounding streets and incorporating the internal ring road. For the reasons stated above, impacts would be less than significant. (*Less than significant*)

h) Would the project 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 inter-mixed with wildlands?

As shown on Figure S-9 in the City's General Plan (see Figure 10 above), the project site does not occur in a fire hazard area and the project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires. Therefore, no impacts are anticipated. (*No impact*)

Hazards and Hazardous Materials Mitigation Measures:

HAZ-1a: Prior to structure disturbance, a State-certified asbestos professional and State-certified lead professional should survey the site structures and determine whether sampling of building materials for ACMs and LBP is warranted. Any abatement or removal of ACMs and LBP shall be performed in accordance with applicable federal, State, and local regulations.

HAZ-1b: Prior to structure disturbance, a qualified professional should survey the site structures and determine whether suspect PCB-containing equipment is present. PCB-containing equipment must be handled and disposed of in accordance with applicable federal, State, and local regulations.

HAZ-2: Prior to issuance of Grading Permits, the City Engineer shall require soils samples and testing for contamination in areas shown on the Grading Plan where soils will be excavated. The Grading Plan for the project shall include a note requiring testing for contamination as well as proper disposal based on test results.

VIII. HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Violate any water quality standards or waste discharge requirements, provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, such as from areas of material storage, vehicle or equipment maintenance (including washing or detailing), waste handling, hazardous materials handling or storage, delivery areas, loading docks, or other outdoor areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) 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? (Panel No. 06071C8682H)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

The following discussion is based on the Drainage Report and Water Quality Management Plan prepared by Dan Guerra & Associates in July 2011, provided in Appendix I and Appendix J, respectively.

The proposed project is within the jurisdictional authority of the Santa Ana Regional Water Quality Control Board (RWQCB). The RWQCB maintains standards for implementation of the Clean Water Act relative to pollutant discharge into surface water bodies. Likewise, RWQCB maintains data on the types and levels of pollution in existing surface waters including chemical and infectious pollutants, and levels of dissolved solids. RWQCB identifies impaired water bodies and enforces clean water policies through the review and approval of discharge permits (National Pollutant Discharge Elimination System (NPDES) Permits).²⁸

The City's Storm Water Drainage System is regulated by Chapter 8.80 of the City's Municipal Code. This chapter is intended to ensure the health, safety and general welfare of the City's residents by prescribing regulations to prohibit non-storm water discharges into the City's storm water drainage system. The project site is currently served by the City's storm water drainage system.

As described in the Drainage Report (Appendix I), The existing site falls to the south at approximately 1.5 percent, and ridges midway between Waterman Avenue on the west and La Junita Street on the east. Approximately 28.5 acres of the site currently drain west to the intersection of Waterman Avenue and Olive Street, and approximately 8.5 acres drain east to the intersection of La Junita Street and Olive Street. The existing residential portion of the site was modeled as 8-10 du/ac (40 percent pervious) and existing Maintenance Building as Commercial (10 percent pervious) with Soil Type "B" for the 2, 5, 10 and 25 year return periods.

The municipal water supply for the City comes from the Bunker Hill Groundwater Basin aquifer, which is located beneath the city. The basin is replenished naturally by local precipitation and by stream flow from rain and snowmelt from the San Bernardino Mountains. While groundwater is the principal source of supply in the City, other sources of water supply include: the State Water Project (SWP), the Santa Ana River, Mill Creek, and Lytle Creek.²⁹

There are no existing streams or rivers within the limits of the project site. The nearest creek is East Twin Creek, a channelized creek that runs east of the project site. According to the City's General Plan, Figure S-1 "100 Year Flood Plain," the project site occurs outside of the 100-year flood zone as mapped on the federal Flood Insurance Rate Map (see Figure 11 below).³⁰ Additionally, the project is not within the inundation area for the Seven Oaks Dam pursuant to General Plan Figure S-2 (see Figure 12 below).³¹ The dam is northeast of the project site (northeast of the City of Highland) and has been designed to withstand a maximum earthquake event of 8.0 magnitude.³²

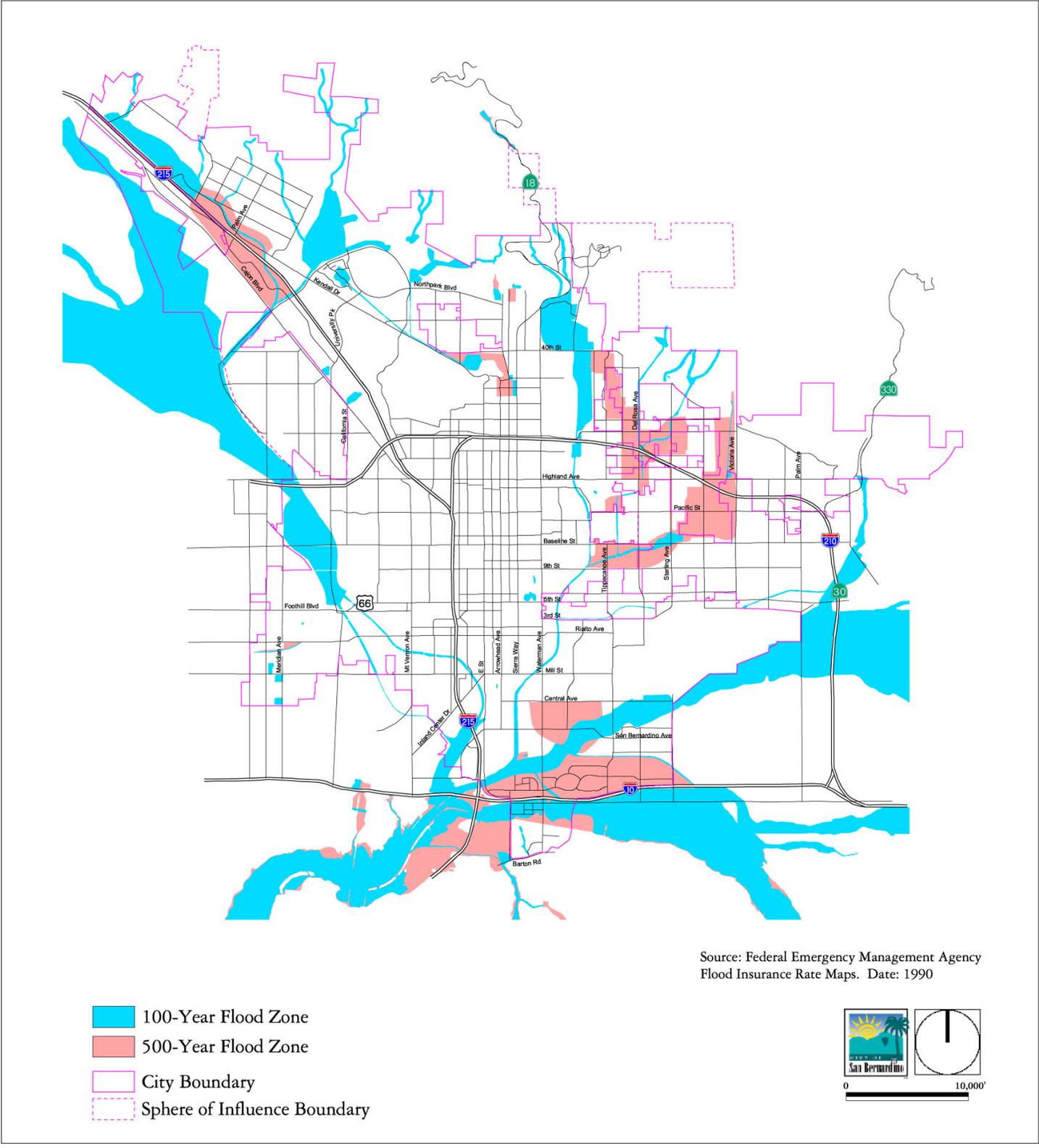
²⁸ California Water Boards, *Regional Water Quality Control Board Overview*, [http://www.waterboards.ca.gov/publications_forms/publications/factsheets/docs/boardoverview.pdf].

²⁹ City of San Bernardino, 2005, *General Plan*, page 9-10.

³⁰ City of San Bernardino, 2005, *General Plan*, page 10-13.

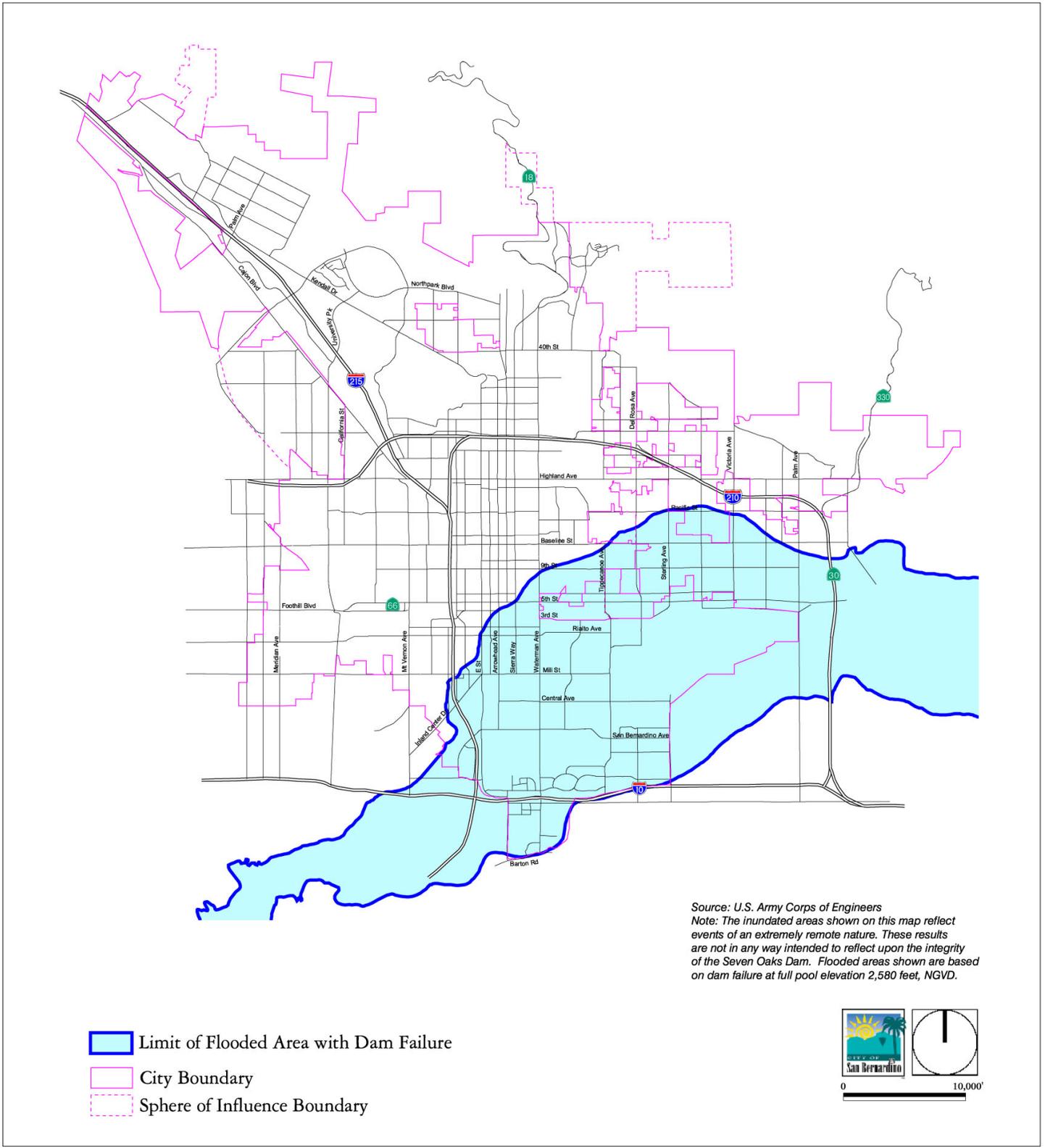
³¹ City of San Bernardino, 2005, *General Plan*, page 10-15.

³² City of San Bernardino, 2005, *General Plan*, page 10-10.



Source: City of San Bernardino General Plan, 2005.

FIGURE II
 100 YEAR FLOOD PLAIN



Source: City of San Bernardino General Plan, 2005.

FIGURE 12

SEVEN OAKS DAM INUNDATION

Discussion

a) Would the project violate any water quality standards or waste discharge requirements, provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality?

The project is subject to compliance with the discharge requirements of the RWQCB pursuant to NPDES Permit No. CA618036 with regard to pollutants carried in storm water runoff. RWQCB requirements are incorporated into the project design as Best Management Practices (BMPs) to protect surface water quality. RWQCB requirements will be administered through plan check review and approval of the Water Quality Management Plan, provided in Appendix J (for long-term water quality management) and Storm Water Pollution Prevention Plan (for short-term water quality management) in order to reduce pollutants from the project. The long-term operations of the project are subject to pollution control requirements of the RWQCB related to all significant redevelopment, which is defined as the addition or replacement of 5,000 or more square feet of impervious surface on an already developed site.

As described in the Drainage Report (Appendix I) the proposed project would distribute runoff such that total flows and flows to each intersection are less than 90 percent of lower return period storm flow rates in the existing condition in accordance with San Bernardino County Flood Control District requirements. The overall result limits proposed flows to approximately 40 percent of existing flows. Flow reductions will be achieved with the implementation of four (4) on-site detention basins. In addition, the depth of water in the basins would be less than 3 feet and would drain within 24 hours of the peak depth in accordance with City and Flood Control District requirements. As an added factor of safety the proposed site will utilize approximately 200,000 square feet of pervious concrete pavement with rock subgrade which would provide significantly reduced impervious area and additional detention, which was not accounted for in the flood management analysis.

For the reasons described above, the project would not violate water quality standards and the impact would be less than significant. (*Less than significant*)

b) Would the project 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)?

The water demand and related impacts of the project are discussed in Section XVI. The project would not require dewatering or interfere with the existing groundwater table below the project site. The project has been included in the planned build-out of the City of San Bernardino pursuant to the approved General Plan Land Use Map. Additionally, the project will include bioswales, pervious concrete areas, green roofs, four detention basins, and perforated storm drains, which will allow infiltration of surface water. Therefore, impacts are anticipated to be less than significant. (*Less than significant*)

c) *Would the project 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?*

There are no existing streams or rivers within the limits of the project area. The project site would be graded to direct all flows to bioswales, pervious concrete areas, the four detention basins and perforated storm drains. These Treatment Control BMPs would fully accommodate surface flows from the project during major storm events. During construction, the surface of the project site would be disturbed and altered slightly with trenching and grading but would not result in significant impacts because a Storm Water Pollution and Prevention Plan (SWPPP) is required for the project and the City's standards for grading and construction would be implemented through the inspection process relative to grading and construction permits, as specified in Municipal Code Chapter 15. These standard procedures will reduce impacts to less than significance. When the project is complete unpaved surfaces would be stabilized with landscaping or paved surfaces to prevent substantial erosion or siltation on- or off-site.

For the reasons stated above, the project would have a less than significant impact on erosion or siltation on- or off-site. (*Less than significant*)

d) *Would the project 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?*

There are no existing streams or rivers within the limits of the project site. The project site would be graded to direct all flows to bioswales, pervious concrete areas, the four detention basins, and perforated storm drains that would fully accommodate surface flows from the project during major storm events. With implementation of these Treatment Control BMPs, the rate of discharge off-site would be slightly less than existing conditions, and would not create significant erosion or impacts on wetlands downstream. The construction phase of the project would temporarily alter existing drainage patterns but this is not expected to result in flooding on- or off-site, because project construction would be implemented pursuant to the City's standards and the SWPPP for the project. Over the long term, the WQMP will be implemented on site. For the reasons stated above, the project would not substantially increase the rate or amount of surface runoff resulting in flooding on- or off-site and the impacts are anticipated to be less than significant. (*Less than significant*)

e) *Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, such as from areas of material storage, vehicle or equipment maintenance (including washing or detailing), waste handling, hazardous materials handling or storage, delivery areas, loading docks, or other outdoor areas?*

The project would maintain approximately the same percentage of impervious surfaces as the current development and with the incorporation of Treatment Control BMPs such as bioswales, detention basins, pervious concrete, green roofs and perforated storm drains with gravel, the proposed project would not increase the amount and rate of runoff-water from the project site. As described in the WQMP (Appendix J), the project would not include activities and areas which could provide substantial additional sources of polluted runoff. Therefore, the impacts would be less than significant. (*Less than significant*)

f) *Would the project 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? (Panel No. 06071C8682H)*

According to the City's General Plan, Figure S-1 "100 Year Flood Plain," the project site occurs outside of the 100-year flood zone as mapped on the federal Flood Insurance Rate Map (see Figure 11 above). Therefore, no impacts are anticipated. *(No impact)*

g) *Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

As stated in Response VIII f, the project site is not within the 100-year flood zone. Therefore, no impacts are anticipated. *(No impact)*

h) *Would the project 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?*

The project is not within the inundation area for the Seven Oaks Dam pursuant to General Plan Figure S-2 (see Figure 12 above). The dam is northeast of the project site (northeast of the City of Highland) and has been designed to withstand a maximum earthquake event of 8.0 magnitude. Due to the design, maintenance, and operation of the dam, it is not likely that dam failure would occur. For the reasons stated above, no impacts are anticipated. *(No impact)*

i) *Would the project potentially be inundated by seiche, tsunami, or mudflow?*

There are no oceans, lakes or reservoirs located near the project site which are typically associated with secondary seismic events from seiche, tsunami, or mudflow. Therefore, no impacts are anticipated. *(No impact)*

Hydrology and Water Quality Mitigation Measures:

None required.

IX. LAND USE AND PLANNING

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be developed within the Hillside Management Overlay District?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Be developed within Foothill Fire Zones A, B, or C as identified in the City's General Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be developed within the Airport Influence Area as adopted by the San Bernardino International Airport Authority?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict or exacerbate a conflict between land uses on the project site and in the surrounding area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

The City's General Plan and Municipal Code include policies, plans, and regulations governing development of the project site with appropriate land uses. The General Plan designates the project site as a Residential Medium (RM) land use with 14 dwelling units per acre (du/ac). The site is surrounded by land designated as Residential Suburban (4.5 du/ac) and Residential Urban (9 du/ac) to the southeast, and commercial uses and public facilities to the north, south and west. The Development Code permits 12 du/ac in the RM zone; however there is a 25 percent density bonus for affordable housing that would apply to the proposed project. The General Plan Housing Element recognizes the need for affordable housing in the City since over half of the City's population have incomes less than 80 percent of the San Bernardino County median income and over one-third have incomes less than 50 percent of the median. The Housing Element also indicates increasing demand for housing for elderly adults that addresses their special needs. As the population ages, there will be a growing demand for senior housing that meets the special physical and financial needs of this group.

There are no specific plans or local coastal programs pertaining to the project site. Nor are there any approved habitat conservation plans or natural community conservation plans applicable to the project site. The project site is not within the Hillside Management Overlay District as indicated on Figure LU-2 of the General Plan (see Figure 13 below). Nor is it within Foothill Fire Zones A, B, or C, as shown in Figure S-9 in the General Plan (see Figure 10 above).

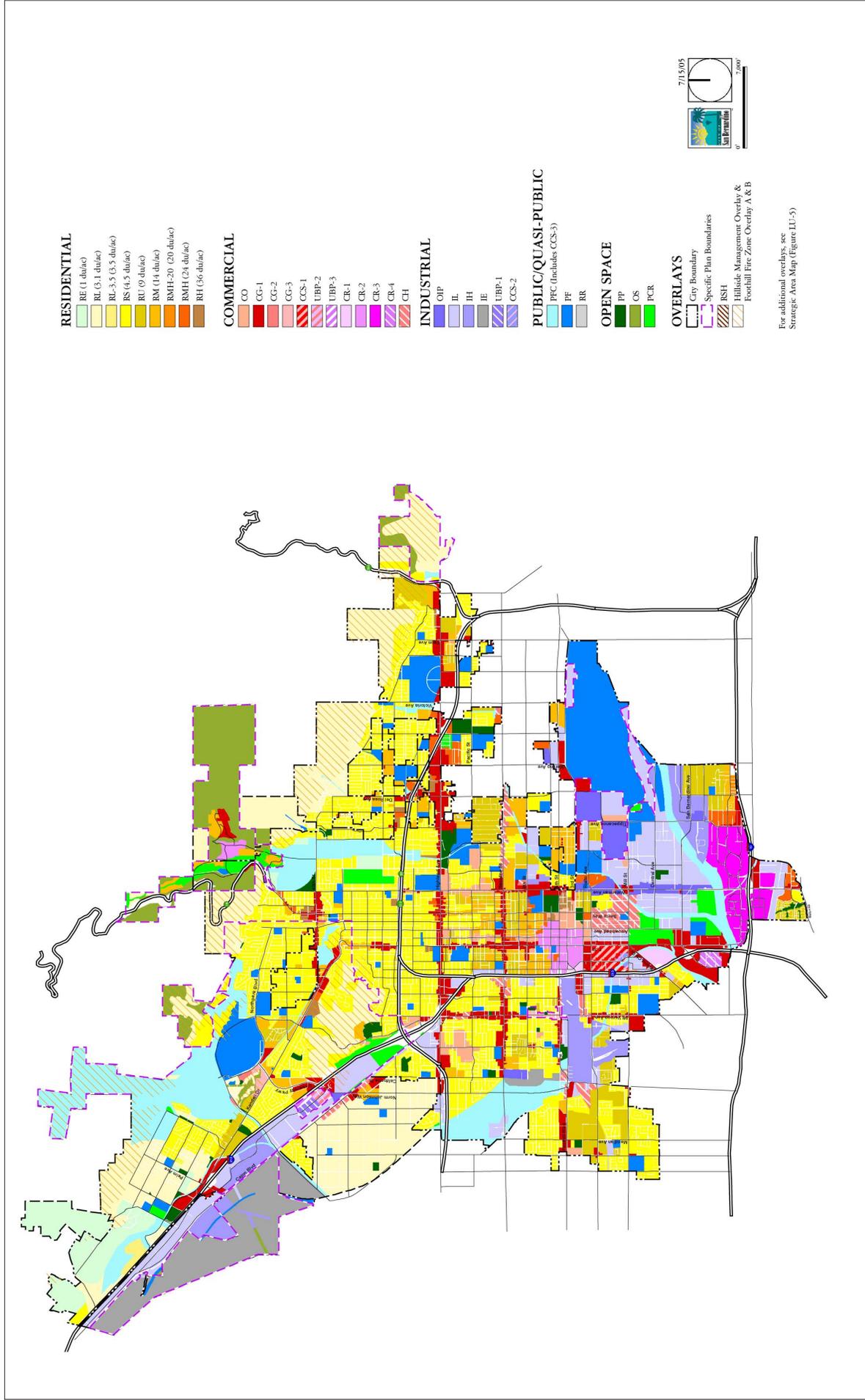


FIGURE 13
GENERAL PLAN LAND USE MAP

Discussion

a) Would the project physically divide an established community?

The proposed project would demolish the existing residential units on the site and construct new residential units, a community center, and other community facilities. The residential character of the project site will be retained and will provide for additional connectivity with the surrounding neighborhood. The project would not physically divide an established community. Therefore, no impacts are anticipated. (*No impact*)

b) Would the project 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?

There are no specific plans or local coastal programs pertaining to the project site. The City's General Plan designates the project site as a Residential Medium (RM) land use with 14 dwelling units per acre (du/ac). The site is surrounded by land designated as Residential Suburban (4.5 du/ac) and Residential Urban (9 du/ac) to the southeast, and commercial uses and public facilities to the north, south and west. The Development Code permits 12 du/ac in the RM zone; however there is a 25 percent density bonus for affordable housing that would apply to the proposed project, bringing the allowable density up to 15 du/ac.

The proposed project will be subdivided into nine separate parcels. These parcels will include the following dwelling units:

- ◆ Parcel 1: Residential buildings (38 dwelling units, 2.54 acres, 14.96 du/ac)
- ◆ Parcel 2: Community and Recreational Centers (0 dwelling units, 5.12 acres)
- ◆ Parcel 3: Senior Housing Buildings (73 dwelling units, 4.12 acres, 17.96 du/ac)
- ◆ Parcel 4: Existing Central Shop, Maintenance Building, Recycling Yard, and Community Garden Building (0 dwelling units, 1.67 acres)
- ◆ Parcel 5: Administration Building (0 dwelling units, 0.54 acres)
- ◆ Parcel 6: Residential buildings (75 units, 5.64 acres, 13.30 du/ac)
- ◆ Parcel 7: Residential Buildings (76 dwelling units, 5.15 acres, 14.76 du/ac)
- ◆ Parcel 8: Residential Buildings (79 dwelling units, 5.76 acres, 13.72 du/ac)
- ◆ Parcel 9: Residential Buildings (69 units, 6.40 acres, 10.78 du/ac)

Based on the information listed above, Parcels 2, 4, and 5 would include the community center and other community facilities, which are allowed with a Development Permit.

The proposed project could include up to 411 dwelling units. Although the density on Parcel 3 is above the permitted density at 17.96 du/ac, this housing will be Senior Housing and is therefore consistent with General Plan Policy 3.1.3, which encourages development of senior housing in all areas of the City, especially the downtown, where the permissible density may be increased by 96 units per acre (178%) to a maximum of 150 units per acre. As shown above, Parcels 1 and 7 are above the permitted density at 14.96 and 14.76 respectively, but within the 15 du/ac density allowed with a 25 percent affordable housing bonus. Parcels 6, 8, and 9 are within the permitted density limits as specified in the General Plan, with densities below 14 du/ac. The overall residential density on the site would be 10.8 du/ac. The proposed project responds to the affordable and senior housing needs identified in

the General Plan with new residential units for a mix of income levels, as well as a 73-unit building dedicated to seniors.

A Conditional Use Permit would be required for the Density Bonus Agreement, Day Care Center, Social Service Uses/Recreation Center, and Development Plan. Therefore, the proposed project is consistent with the residential land use designation and permitted densities and would not conflict with the General Plan.

Chapter 19.04 of the City's Development Code establishes regulations and development standards to define and implement appropriate scale and development characteristics for each parcel and to manage conflicts between land uses and reduce nuisances. The project includes a request for a 25 percent density bonus and three concessions: reduced private open space area, reduced off-street parking, and reduced setbacks. The entire project is designed to provide an open and park-like environment for residents and will include community open space areas, as well as community gardens and Community and Social Services Uses/Recreation Centers. Further, the reduction in off-street parking and setbacks are intended to accommodate a more pedestrian-scale design and to promote a walkable and attractive community.

For the reasons stated above, the impacts would be less than significant. (*Less than significant*)

c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

There are no approved habitat conservation plans or natural community conservation plans applicable to the project site. Therefore, no impact to a habitat conservation plan or natural community conservation plan is anticipated. (*No impact*)

d) Would the project be developed within the Hillside Management Overlay District?

The project is not within the Hillside Management Overlay District as indicated on Figure LU-2 of the General Plan (see Figure 13 above). Therefore, the project would have no impacts related to hillside development. (*No impact*)

e) Would the project be developed within Foothill Fire Zones A, B, or C as identified in the City's General Plan?

As shown on Figure S-9 in the City's General Plan, the project site is not within Foothill Fire Zones A, B, or C (see Figure 10 above). Therefore, no impacts are anticipated. (*No impact*)

f) Would the project be developed within the Airport Influence Area as adopted by the San Bernardino International Airport Authority?

As shown in Figure LU-4 of the City's General Plan, the project site does not occur within the San Bernardino International Airport (SBIA) Influence Area (see Figure 9 above). Therefore, no impacts are anticipated. (*No impact*)

g) Would the project conflict or exacerbate a conflict between land uses on the project site and in the surrounding area?

The proposed project is consistent with the current land use on the site and the General Plan and Development Code. It would not conflict or exacerbate a conflict between land uses on the project site and in the surrounding area. Therefore, no impacts are anticipated. (*No impact*)

Land Use and Planning Mitigation Measures:

None required.

X. MINERAL RESOURCES

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located in a Mineral Resource Zone as adopted by the State Mining and Geology Board and identified in the City's General Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Existing Conditions

In 1975, the State legislature adopted the Surface Mining and Reclamation Act (SMARA), designating Mineral Resources Zones (MRZs) that were of State-wide or regional importance. Classification of land within California takes place according to a priority list established by the State Mining and Geology Board (SMGB).³³ The four classifications used by the State to define MRZs are:

- ◆ **MRZ-1:** Areas where the available geologic information indicates no significant mineral deposits or a minimal likelihood of significant mineral deposits.
- ◆ **MRZ-2:** Areas where the available geologic information indicates that there are significant mineral deposits or that there is a likelihood of significant mineral deposits.
- ◆ **MRZ-3:** Areas where the available geologic information indicates that mineral deposits are likely to exist, however, the significance of the deposit is undetermined.
- ◆ **MRZ-4:** Areas where there is not enough information available to determine the presence or absence of mineral deposits.

The project site is located within the MRZ-3, as shown in Figure NRC-3 of the City's General Plan (see Figure 14 below).³⁴

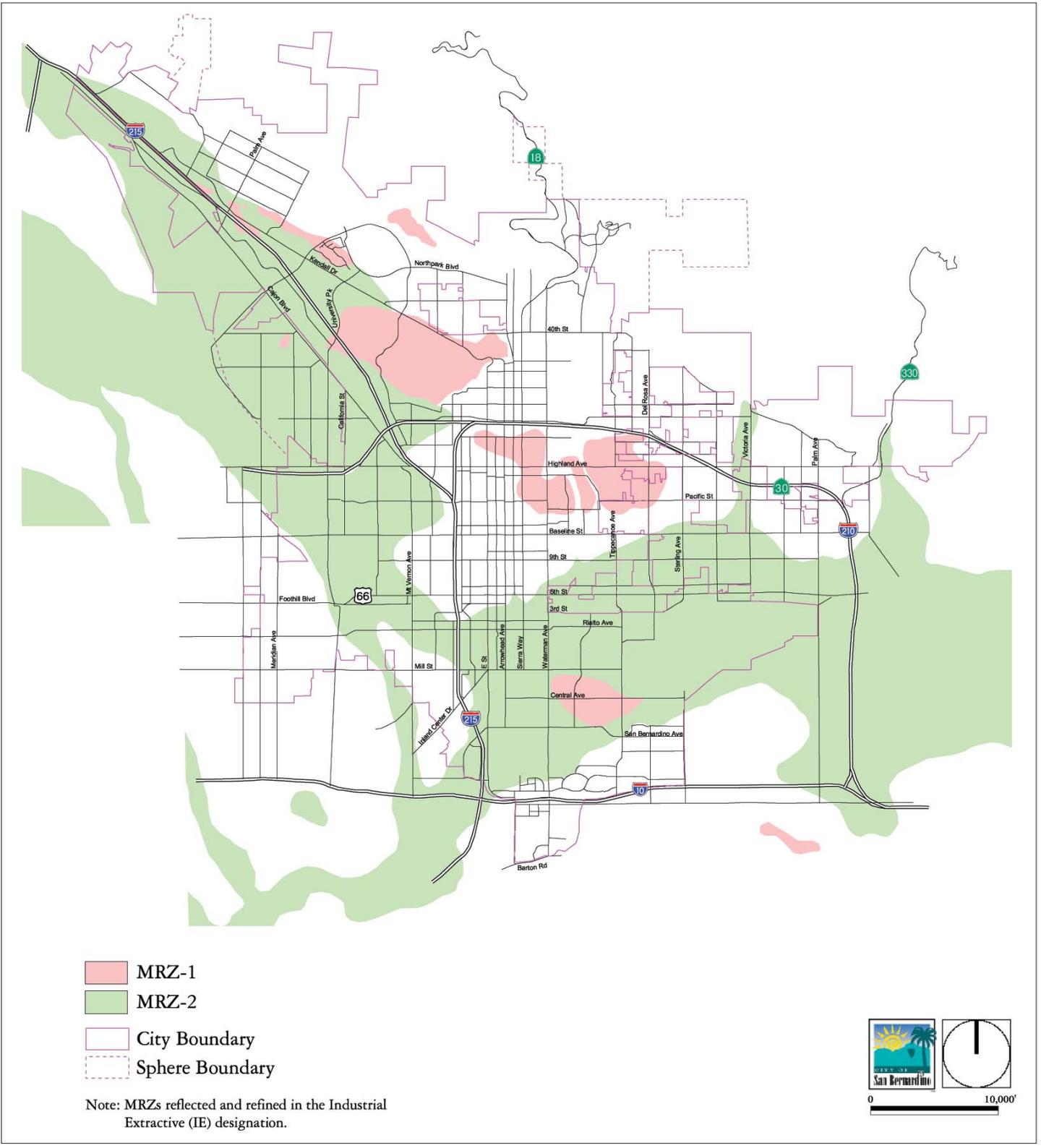
Discussion

a) *Would the project 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?*

The project site is located within the MRZ-3, meaning the significance of mineral deposits cannot be determined from available data. The use of the site for mineral extraction would not be consistent with the City's General Plan and the existing development pattern in the project area. Therefore, it is not likely that the site would be used for mineral extraction. The project will demand aggregate

³³ City of San Bernardino, 2005, *General Plan*, pages 12-12 and 12-13.

³⁴ City of San Bernardino, 2005, *General Plan*, pages 12-15.



Source: City of San Bernardino General Plan, 2005.

FIGURE 14

MINERAL RESOURCE ZONES

resources, such as steel, wood, concrete, and asphalt, during construction. These resources are commercially available in the southern California region without any constraint and no potential for adverse impacts to the natural resources base supporting these materials is forecast to occur over the foreseeable future. No loss of valuable mineral resources would occur with the development of the project. Therefore, no impacts are anticipated. *(No impact)*

b) Would the project result in the loss of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Refer to Response Xa above. The project site is not a locally-important mineral resource recovery site pursuant to the City's General Plan, any specific plan or other land use plan and it would not result in the loss of such a site. Therefore, the proposed project would have no impacts. *(No impact)*

c) Would the project be located in a Mineral Resource Zone as adopted by the State Mining and Geology Board and identified in the City's General Plan?

Refer to Response Xa above. The project occurs within MRZ-3 as adopted by the State Mining and Geology Board. By statute, the Board does not utilize existing land uses as a criterion in its classification of Mineral Resources Zones.³⁵ Based on the urbanized location of the site, and accessibility by trucks, mining would not be feasible and therefore the proposed project would not result in the loss or availability of a known mineral resource that could be developed. Therefore, no impacts are anticipated. *(No impact)*

Mineral Resources Mitigation Measures:

None required.

³⁵ City of San Bernardino, 2005, *General Plan*, page 12-13.

XI. NOISE

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the City’s General Plan or Development Code, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or Airport Influence Area, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

The following discussion is based on the Waterman Gardens Master Plan Project Noise Assessment, prepared by Impact Sciences, Inc. in October 2012 (Appendix F).

Noise can be measured in the form of a decibel (dB), which is a unit for describing the amplitude of sound. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called “A-weighting,” written “dB(A).” The A-weighted sound level is measured on a logarithmic scale such that a doubling of sound energy results in a 3.0 dB(A) increase in noise level.³⁶ In general, changes in a community noise level of less than 3.0 dB(A) are not typically noticed by the human ear.³⁷ Changes from 3.0 to 5.0 dB(A) may be noticed by some individuals who are extremely sensitive to changes in noise.³⁸ A greater than 5.0 dB(A) increase is readily noticeable, while the human ear perceives a 10.0 dB(A) change in sound level to be a doubling or halving sound.³⁹

The predominant rating scales for noise in the State of California are the Maximum Noise Level (Lmax), the Equivalent-Continuous Sound Level (Leq), and the Community Noise Equivalent Level (CNEL). The Lmax is the maximum noise level measured during a specified time period. The Leq is

³⁶ U.S. Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, (2006) 2-3.

³⁷ U.S. Department of Transportation, Federal Highway Administration, *Highway Noise Fundamentals*, (1980) 81.

³⁸ U.S. Department of Transportation, Federal Highway Administration, *Highway Noise Fundamentals*, (1980) 81.

³⁹ U.S. Department of Transportation, Federal Highway Administration, *Highway Noise Fundamentals*, (1980) 81.

the average A-weighted sound level measured over a given time interval. Leq can be measured over any period, but is typically measured for 1-minute, 15-minute, 1-hour, or 24-hour periods. CNEL is an average A-weighted sound level measured over a 24-hour period. However, this noise scale is adjusted to account for some individuals' increased sensitivity to noise levels during the evening and nighttime hours. A CNEL noise measurement is obtained by adding 5 dB to sound levels occurring during the evening from 7:00 PM to 10:00 PM, and 10 dB to sound levels occurring during the nighttime from 10:00 PM to 7:00 AM. The 5 dB and 10 dB "penalties" are applied to account for increased noise sensitivity during the evening and nighttime hours. The logarithmic effect of adding these penalties to the 1-hour Leq measurements typically results in a CNEL measurement that is within approximately 3 dB(A) of the peak-hour Leq.⁴⁰

Additional terminology used for assessing noise include the Minimum Noise level (L_{min}), which is the minimum sound level measured during the measurement period, and the Day-Night Level (L_{dn}), which is the energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 PM to 7:00 AM. The L_{dn} and CNEL values differ by less than 1 dB. As discussed above, a 1 dB difference in noise level is not noticed by the human ear. Therefore, as a matter of practice, L_{dn} and CNEL values are considered to be equivalent.

Vibration consists of waves transmitted through solid material. Ground-borne vibration propagates from the source through the ground to adjacent buildings by surface waves. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hertz (Hz). The normal frequency range of most ground-borne vibration that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz. Vibration is often measured in terms of the peak particle velocity (PPV) in inches per second (in/sec), because it is related to the stresses that are experienced by buildings. Vibration is also measured in vibration decibels (VdB). The human threshold of perception is around 65 VdB; the dividing line between barely perceptible and distinctly perceptible is around 75 VdB; and vibration levels are acceptable at 85 VdB if there are an infrequent number of events per day.⁴¹ Vibration energy attenuates as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source.⁴² Ground-borne vibration is generally limited to areas within a few hundred feet of certain types of construction activities, especially pile driving. Human annoyance by vibration is related to the vibration energy and the number and duration of events, as well as the setting in which the person experiences the vibration.

The project site is located at the intersection of Waterman Avenue and Baseline Street in the City of San Bernardino, California. The project area contains a variety of uses including residential, commercial, light-industrial and schools. Noise generated by vehicular traffic traveling on the local roadway network represents the predominant and most consistent noise source in the project area. Vehicles traveling in the project area generally include automobiles, trucks, buses, and motorcycles. Noise lev-

⁴⁰ California Department of Transportation, *Technical Noise Supplement; A Technical Supplement to the Traffic Noise Analysis Protocol*, (Sacramento, California: October 1998), pp. N51-N54.

⁴¹ U.S. Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, (2006), 7-8.

⁴² California Department of Transportation, *Earthborne Vibrations*, (1990) VII-27.

els were modeled with SoundPlan, a three-dimensional noise propagation model that is used to visualize the effects of noise in the environment. The model was setup to use the Federal Highway Administration (FHWA) Traffic Noise Model (TNM) algorithms, which were used to calculate the L_{dn} noise levels based on traffic volumes, vehicle fleet mix, roadway traveling speeds, roadway geometry, elevation, and site conditions. Traffic volumes utilized as data inputs to the noise prediction model were based on information provided by Fehr & Peers, as part of the traffic study conducted for the project. The primary roadways analyzed in the traffic study include the following:

- ◆ Baseline Street between E Street and Del Rosa Drive
- ◆ Waterman Avenue between Highland Avenue and 5th Street
- ◆ Crestview Avenue just north of Baseline Street
- ◆ La Junita Street between Baseline Street and Olive Street
- ◆ Olive Street at the intersection of Waterman Avenue

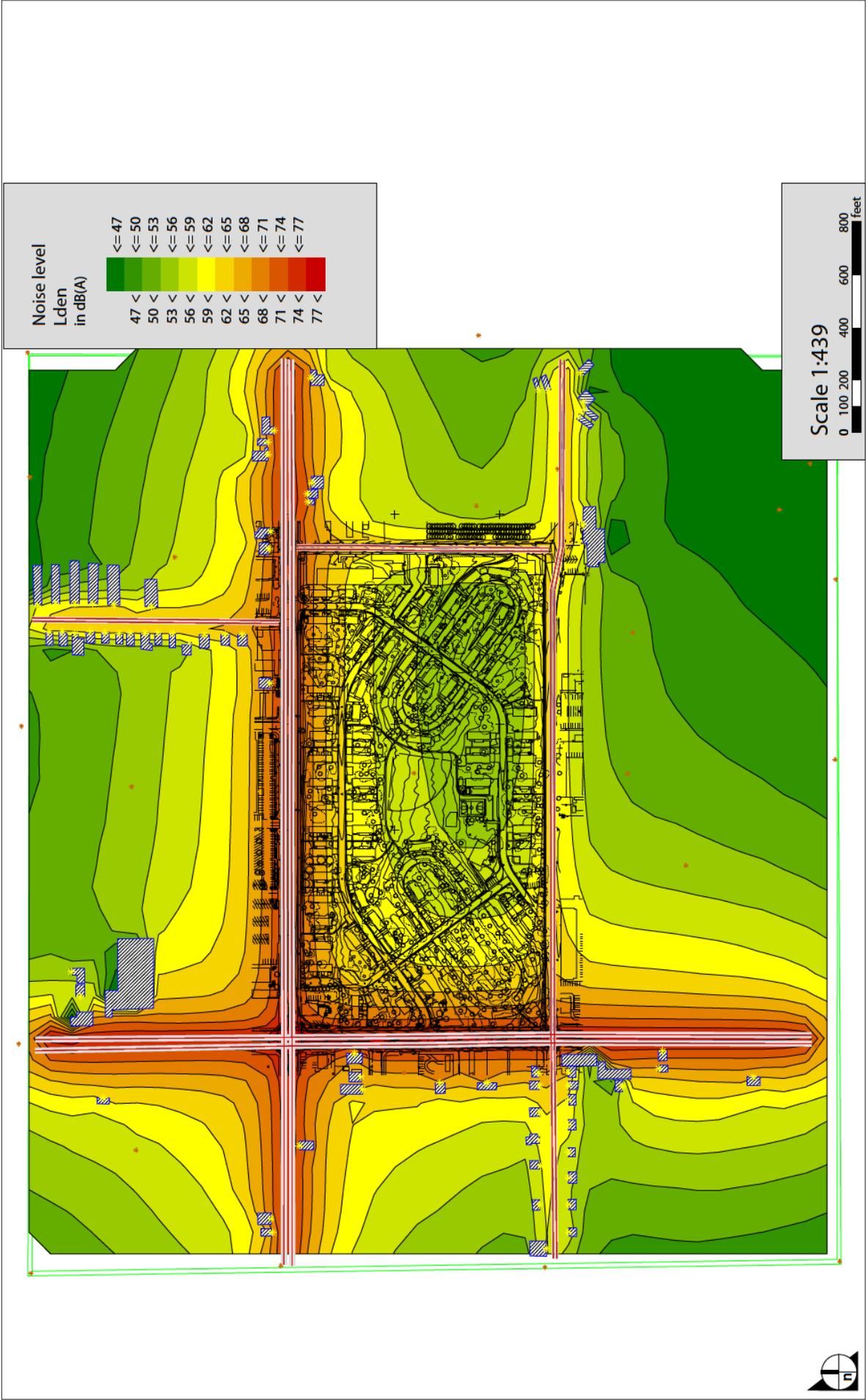
The traffic volumes for these studied roadways were then split into vehicle type (automobiles, medium trucks, heavy trucks, buses, motorcycles, and auxiliary vehicles) and traffic volumes by time of day (daytime, evening, nighttime) by using the EMFAC2007 model developed by the California Air Resources Board (CARB). For this project, the model was run for the non-desert portion of San Bernardino County within the South Coast Air Basin.

The results of the SoundPlan modeling analysis are provided in Table 8 and presented graphically in Figure 15.

The State of California Department of Health Services, Environmental Health Division, has published recommended guidelines for noise and land use compatibility. The State Noise Guidelines state that residential land uses and other noise-sensitive receptors generally should locate in areas where outdoor ambient noise levels do not exceed 65 to 70 dB(A) (CNEL or L_{dn}). According to the State Noise Guidelines, an exterior noise level of 60 dB(A) CNEL is considered to be “normally acceptable” for single-family, duplex, and mobile homes involving normal, conventional construction, without any special noise insulation requirements. Exterior noise levels up to 65 dB(A) CNEL are typically considered “normally acceptable” for multi-family units and transient lodging without any special noise insulation requirements. Between these values and 70 dB(A) CNEL, exterior noise levels are typically considered “conditionally acceptable,” and residential construction should only occur after a detailed analysis of the noise reduction requirements and needed noise attenuation features have been included in the project design. Under the State Noise Guidelines, an exterior noise level of 70.0 dB(A) CNEL is typically the dividing line between an acceptable and unacceptable exterior noise environment for all noise-sensitive uses, including schools, libraries, churches, hospitals, day care centers, and nursing homes of conventional construction.

Chapter 14 of the City of San Bernardino General Plan is the Noise Element, which provides policy guidance that addresses the generation, mitigation, avoidance, and the control of excessive noise. The following policies are particularly relevant to the proposed project:

14.1.1 Minimize, reduce, or prohibit, as may be required, the new development of housing, health care facilities, schools, libraries, religious facilities, and other noise sensitive uses in areas where existing or future noise levels exceed an L_{dn} of 65 dB(A) exterior and an L_{dn} of 45 dB(A) interior if the noise cannot be reduced to these levels.



Source: Impact Sciences, Inc., 2011.

FIGURE 15
EXISTING ROADWAY NOISE LEVELS

TABLE 8

SUMMARY OF EXISTING NOISE LEVELS NEAR THE PROJECT SITE

Model ID	Receptor Type	Roadway	Road Segment	Maximum Estimated Noise Level L_{dn} (dB(A))
28	Residential	Baseline	At La Junita	69.7
29	Residential	Baseline	East of La Junita	70.3
30	Residential	Baseline	East of La Junita	69.5
31	Residential	Baseline	East of La Junita	69.2
32	Residential	Baseline	East of La Junita	71.4
33	Residential	Baseline	East of La Junita	69.1
34	Residential	Baseline	East of La Junita	69.4
35	Residential	Baseline	East of La Junita	67.9
36	Residential	Baseline	East of La Junita	67.0
7	Residential	Baseline	West of Crestview	70.0
1	Residential	Baseline	West of Waterman	70.1
2	Residential	Baseline	West of Waterman	69.9
68	Residential	Baseline	West of Waterman	72.4
8	Residential	Crestview	North of Baseline	63.3
9	Residential	Crestview	North of Baseline	62.3
10	Residential	Crestview	North of Baseline	61.6
11	Residential	Crestview	North of Baseline	58.2
12	Residential	Crestview	North of Baseline	61.7
13	Residential	Crestview	North of Baseline	61.7
14	Residential	Crestview	North of Baseline	61.5
15	Residential	Crestview	North of Baseline	61.4
16	Residential	Crestview	North of Baseline	61.1
17	Residential	Crestview	North of Baseline	61.4
18	Residential	Crestview	North of Baseline	61.4
19	Residential	Crestview	North of Baseline	60.5
20	Residential	Crestview	North of Baseline	61.1
21	Residential	Crestview	North of Baseline	60.8
22	School	Crestview	North of Baseline	58.6
23	School	Crestview	North of Baseline	59.0
24	School	Crestview	North of Baseline	59.3
25	School	Crestview	North of Baseline	59.5
26	School	Crestview	North of Baseline	59.9
27	School	Crestview	North of Baseline	60.7
43	Church	Olive	At La Junita	56.5
37	Residential	Olive	East of La Junita	52.7

TABLE 8 *SUMMARY OF EXISTING NOISE LEVELS NEAR THE PROJECT SITE* (CONTINUED)

Model ID	Receptor Type	Roadway	Road Segment	Maximum Estimated Noise Level L_{dn} (dB(A))
38	Residential	Olive	East of La Junita	57.0
39	Residential	Olive	East of La Junita	57.3
40	Residential	Olive	East of La Junita	55.2
41	Residential	Olive	East of La Junita	55.2
42	Residential	Olive	East of La Junita	55.7
48	Residential	Olive	West of Waterman	61.5
49	Residential	Olive	West of Waterman	65.5
50	Residential	Olive	West of Waterman	60.9
51	Residential	Olive	West of Waterman	62.9
52	Residential	Olive	West of Waterman	59.5
53	Residential	Olive	West of Waterman	60.0
54	Residential	Olive	West of Waterman	58.0
55	Residential	Olive	West of Waterman	58.8
56	Residential	Olive	West of Waterman	56.7
57	Residential	Olive	West of Waterman	57.9
58	Residential	Olive	West of Waterman	56.1
59	Residential	Olive	West of Waterman	56.8
60	Residential	Olive	West of Waterman	55.6
61	Residential	Olive	West of Waterman	55.1
62	Residential	Olive	West of Waterman	58.1
64	Residential	Waterman	Between Baseline and Olive	65.8
3	Residential	Waterman	North of Baseline	61.8
5	Residential	Waterman	North of Baseline	56.1
6	Residential	Waterman	North of Baseline	53.7
63	Residential	Waterman	North of Olive	65.1
65	Residential	Waterman	South of Baseline	63.1
66	Church	Waterman	South of Baseline	73.6
67	Residential	Waterman	South of Baseline	65.0
44	Residential	Waterman	South of Olive	64.9
45	Residential	Waterman	South of Olive	73.9
46	Residential	Waterman	South of Olive	65.0
47	Residential	Waterman	South of Olive	56.5

Note: The effect of any existing noise barriers were not taken into account in the modeling analysis.
 Source: Impact Sciences, Inc.

14.2.2 Employ noise mitigation practices when designing future streets and highways, and when improvements occur along existing road segments. Mitigation measures should emphasize the establishment of natural buffers or setbacks between the arterial roadways and adjoining noise-sensitive areas.

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

Consistent with the General Plan, the City of San Bernardino Municipal Code specifies noise restrictions, exemptions, and variances for noise sources. Several of these are applicable to the proposed project. Section 8.54.020(L) of the Municipal Code prohibits the “operation or use between the hours of 10:00 PM and 8:00 AM 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, except with the approval of the City.” Moreover, Section 8.54.070 specifically prohibits “any work of construction, erection, alteration, repair, addition, movement, demolition, or improvement to any building or structure except within the hours of 7:00 AM and 8:00 PM.” The Municipal Code also exempts certain activities associated with the proposed project. Section 8.54.020(H) states that noise resulting from “essential public services and facilities, including, but not limited to, trash collection and those of public utilities subject to the regulatory jurisdiction of the California Public Utilities Commission” are exempt from the provisions of Chapter 8.

The City’s Noise Ordinance is codified in Chapter 19 of the Development Code. Section 19.20.030.15 specifies maximum acceptable levels of noise for residential uses in the City. The standard indicates that exterior noise levels at residential locations should not exceed a CNEL of 65 dB while interior levels should not exceed an annual CNEL of 45 dB in any habitable room.

The City’s Vibration Ordinance is also codified in Chapter 19 of the Development Code. Section 19.20.030.28 states that “no vibration associated with any use shall be permitted which is discernible beyond the boundary line of the property.”

Discussion

a) Would the project expose people to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or other applicable standards?

Construction Noise

The construction noise impacts were estimated using data from the Federal Transit Administration (FTA). The FTA has compiled data on the noise-generating characteristics of specific types of construction equipment.⁴³ This analysis modeled the maximum construction noise impacts under several worst-case scenarios, each scenario representing a combination of equipment types and locations. Noise levels generated by heavy equipment can range from approximately 75 dB(A) to noise levels in excess of 100 dB(A) when measured at a distance of 50 feet from the noise source. The noise levels diminish rapidly with distance at a rate of approximately 6.0 to 7.5 dB(A) per doubling of distance for acoustically hard and soft sites, respectively.

⁴³ U.S. Department of Transportation, Federal Highway Administration, Roadway Noise Construction Model (RCNM), Software Version 1.1 (12/08/2008).

The types of construction equipment used would vary depending on the construction activity taking place. Demolition would use equipment such as saws, dozers, excavators, and backhoes. Grading would use equipment such as dozers, excavators, graders, and backhoes. Building construction would use equipment such as forklifts, cranes, generators, air compressors, and welders. Surface paving would use rollers and paving equipment.

The noise levels associated with construction of the proposed project are provided below in Table 9. The Lmax noise level represents the highest instantaneous noise levels that would be expected and the Leq noise level takes into account estimate usage factors, or load factors, for the equipment. The load factors are an estimated percentage of time that the equipment would actually be in use. In order to provide a conservative analysis, the noise levels were estimated at the closest point to noise sensitive receptors. The closest point at which heavy-duty construction equipment would operate from noise sensitive receptors would be approximately 100 feet while hand equipment, such as saws and welders, would be approximately 150 feet.

TABLE 9 *ESTIMATED UNMITIGATED CONSTRUCTION NOISE LEVELS*

Construction Activity	Noise Levels	
	Lmax (dB(A))	Leq (dB(A))
Demolition	80.5	75.0
Grading	79.0	75.0
Building Construction	79.0	76.0

Source: Impact Sciences, Inc.

Impact NOISE-1: The estimated construction noise levels associated with the project would result in a potentially significant impact. However, mitigation of construction noise impacts to a level that is less than significant would be conducted through the enforcement of the San Bernardino Municipal Code and in a broader sense through the policies of the General Plan Noise Element. In addition, implementation of mitigation measure NOISE-1 would ensure that impacts associated with construction noise would be less than significant.

Mitigation Measure NOISE-1: The project shall comply with the following construction best management practices:

- ◆ Two weeks prior to the commencement of construction for any phase, notification must be provided to surrounding land uses within 1,000 feet of the project site disclosing the construction schedule, including various types of activities that would be occurring throughout the duration of each construction phase.
- ◆ Provide designated truck routes that minimize impacts on local traffic and neighborhoods.
- ◆ Schedule high noise-producing activities between the hours of 8:00 AM and 4:00 PM Monday through Saturday to minimize disruption to neighboring residential homes.

- ◆ Ensure that construction equipment is properly muffled according to industry standards and in good working condition.
- ◆ Place noise-generating construction equipment and locate construction staging areas away from residential homes.
- ◆ Use electric air compressors and similar power tools rather than diesel equipment to the extent that the necessary equipment are commercial available.
- ◆ Construction-related equipment, including heavy-duty equipment, motor vehicles, generators, air compressors, and other portable equipment, shall be turned off when not in use for more than 30 minutes.
- ◆ Construction vehicles and equipment outfitted with back-up alarms shall utilize “smart back-up alarms” that will generate sound at least five decibels louder than the surrounding noise instead of fixed-decibel back-up alarms.
- ◆ Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow for surrounding residents to contact the job superintendent. If the superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action to the reporting party.

Operational Noise

The proposed project would result in an incremental increase in area traffic volumes above those that would occur without the project. Noise generated by vehicular traffic traveling on the local roadway network represents the predominant and most consistent noise source for the project. Vehicles traveling in the project area generally include automobiles, trucks, buses, and motorcycles. The project would require the use of heavy trucks for refuse and municipal solid waste collection. The project would also include rooftop condensers for residential heating ventilation and cooling systems (HVAC); however, the noise from these would be drowned out by traffic and truck noise. The operational noise impacts were analyzed under four scenarios:

- ◆ Future Opening Year (2013) Traffic Volumes without the Project
- ◆ Future Opening Year (2013) Traffic Volumes plus the Project
- ◆ Future Buildout Year (2030) Traffic Volumes without the Project
- ◆ Future Buildout Year (2030) Traffic Volumes plus the Project

The results of the SoundPlan modeling analysis for the opening year scenarios are provided in Table 10, and Figures 16 and 17. The figures show the area near to the project site, the noise sensitive receptors, and the noise contours. The shaded areas indicate the modeled noise levels in dB(A) L_{dn} , which is equivalent to dB(A) CNEL. As shown in Table 10, the increase in noise levels is much less than 3 dB(A). As a result, the increase in noise levels from future 2013 traffic volume growth and the incremental increase in project related noise would not be perceptible and would result in a less than significant impact.

The results of the SoundPlan modeling analysis for the future buildout year scenarios are provided in Table 11 and are presented graphically in Figure 18, Cumulative Future (2030) Roadway Noise Contours – Without Project and in Figure 19, Cumulative Future (2030) Roadway Noise Contours – With

TABLE 10 *SUMMARY OF FUTURE OPENING YEAR (2013) NOISE LEVELS NEAR THE PROJECT SITE*

Model ID	Receptor Type	Roadway	Road Segment	Maximum Estimated Noise Level L _{dn} (dB(A))				
				Existing	Future Without Project		Future Plus Project	
					Estimated Noise Level	Change from Existing	Estimated Noise Level	Change from Existing
28	Residential	Baseline	At La Junita	69.7	69.9	0.2	70.1	0.4
29	Residential	Baseline	East of La Junita	70.3	70.5	0.2	70.6	0.3
30	Residential	Baseline	East of La Junita	69.5	69.7	0.2	69.8	0.3
31	Residential	Baseline	East of La Junita	69.2	69.5	0.3	69.6	0.4
32	Residential	Baseline	East of La Junita	71.4	71.7	0.3	71.8	0.4
33	Residential	Baseline	East of La Junita	69.1	69.4	0.3	69.5	0.4
34	Residential	Baseline	East of La Junita	69.4	69.6	0.2	69.7	0.3
35	Residential	Baseline	East of La Junita	67.9	68.1	0.2	68.2	0.3
36	Residential	Baseline	East of La Junita	67.0	67.2	0.2	67.3	0.3
7	Residential	Baseline	West of Crestview	70.0	70.3	0.3	70.7	0.7
1	Residential	Baseline	West of Waterman	70.1	70.4	0.3	70.7	0.6
2	Residential	Baseline	West of Waterman	69.9	70.2	0.3	70.5	0.6
68	Residential	Baseline	West of Waterman	72.4	72.7	0.3	73.0	0.6
8	Residential	Crestview	North of Baseline	63.3	63.5	0.2	63.8	0.5
9	Residential	Crestview	North of Baseline	62.3	62.5	0.2	62.8	0.5
10	Residential	Crestview	North of Baseline	61.6	61.8	0.2	62.0	0.4
11	Residential	Crestview	North of Baseline	58.2	58.4	0.2	58.4	0.2
12	Residential	Crestview	North of Baseline	61.7	61.9	0.2	62.0	0.3
13	Residential	Crestview	North of Baseline	61.7	61.8	0.1	61.9	0.2
14	Residential	Crestview	North of Baseline	61.5	61.6	0.1	61.7	0.2
15	Residential	Crestview	North of Baseline	61.4	61.5	0.1	61.6	0.2
16	Residential	Crestview	North of Baseline	61.1	61.2	0.1	61.3	0.2
17	Residential	Crestview	North of Baseline	61.4	61.5	0.1	61.6	0.2
18	Residential	Crestview	North of Baseline	61.4	61.5	0.1	61.6	0.2
19	Residential	Crestview	North of Baseline	60.5	60.7	0.2	60.7	0.2
20	Residential	Crestview	North of Baseline	61.1	61.2	0.1	61.3	0.2
21	Residential	Crestview	North of Baseline	60.8	61.0	0.2	61.0	0.2

TABLE 10 *SUMMARY OF FUTURE OPENING YEAR (2013) NOISE LEVELS NEAR THE PROJECT SITE*
(CONTINUED)

Model ID	Receptor Type	Roadway	Road Segment	Existing	Maximum Estimated Noise Level L _{dn} (dB(A))			
					Future Without Project		Future Plus Project	
					Estimated Noise Level	Change from Existing	Estimated Noise Level	Change from Existing
22	School	Crestview	North of Baseline	58.6	58.7	0.1	58.7	0.1
23	School	Crestview	North of Baseline	59.0	59.1	0.1	59.1	0.1
24	School	Crestview	North of Baseline	59.3	59.4	0.1	59.4	0.1
25	School	Crestview	North of Baseline	59.5	59.6	0.1	59.6	0.1
26	School	Crestview	North of Baseline	59.9	60.0	0.1	60.1	0.2
27	School	Crestview	North of Baseline	60.7	60.8	0.1	61.0	0.3
43	Church	Olive	At La Junita	56.5	57.2	0.7	57.9	1.4
37	Residential	Olive	East of La Junita	52.7	53.4	0.7	53.6	0.9
38	Residential	Olive	East of La Junita	57.0	57.7	0.7	58.4	1.4
39	Residential	Olive	East of La Junita	57.3	58.2	0.9	58.7	1.4
40	Residential	Olive	East of La Junita	55.2	56.0	0.8	56.5	1.3
41	Residential	Olive	East of La Junita	55.2	56.0	0.8	56.5	1.3
42	Residential	Olive	East of La Junita	55.7	56.6	0.9	57.1	1.4
48	Residential	Olive	West of Waterman	61.5	61.7	0.2	61.8	0.3
49	Residential	Olive	West of Waterman	65.5	65.7	0.2	65.8	0.3
50	Residential	Olive	West of Waterman	60.9	61.1	0.2	61.1	0.2
51	Residential	Olive	West of Waterman	62.9	63.2	0.3	63.2	0.3
52	Residential	Olive	West of Waterman	59.5	59.7	0.2	59.8	0.3
53	Residential	Olive	West of Waterman	60.0	60.2	0.2	60.2	0.2
54	Residential	Olive	West of Waterman	58.0	58.3	0.3	58.3	0.3
55	Residential	Olive	West of Waterman	58.8	59.0	0.2	58.9	0.1
56	Residential	Olive	West of Waterman	56.7	57.0	0.3	56.9	0.2
57	Residential	Olive	West of Waterman	57.9	58.1	0.2	58.1	0.2
58	Residential	Olive	West of Waterman	56.1	56.3	0.2	56.3	0.2
59	Residential	Olive	West of Waterman	56.8	57.0	0.2	57.0	0.2
60	Residential	Olive	West of Waterman	55.6	55.8	0.2	55.7	0.1
61	Residential	Olive	West of Waterman	55.1	55.4	0.3	55.4	0.3

TABLE 10 *SUMMARY OF FUTURE OPENING YEAR (2013) NOISE LEVELS NEAR THE PROJECT SITE*
(CONTINUED)

Model ID	Receptor Type	Roadway	Road Segment	Existing	Maximum Estimated Noise Level L _{dn} (dB(A))			
					Future Without Project		Future Plus Project	
					Estimated Noise Level	Change from Existing	Estimated Noise Level	Change from Existing
62	Residential	Olive	West of Waterman	58.1	58.2	0.1	58.2	0.1
64	Residential	Waterman	Between Baseline & Olive	65.8	66.0	0.2	66.2	0.4
3	Residential	Waterman	North of Baseline	61.8	62.1	0.3	62.2	0.4
5	Residential	Waterman	North of Baseline	56.1	56.3	0.2	56.5	0.4
6	Residential	Waterman	North of Baseline	53.7	54.0	0.3	54.1	0.4
63	Residential	Waterman	North of Olive	65.1	65.4	0.3	65.5	0.4
65	Residential	Waterman	South of Baseline	63.1	63.4	0.3	63.6	0.5
66	Church	Waterman	South of Baseline	73.6	73.9	0.3	74.0	0.4
67	Residential	Waterman	South of Baseline	65.0	65.2	0.2	65.4	0.4
44	Residential	Waterman	South of Olive	64.9	65.2	0.3	65.3	0.4
45	Residential	Waterman	South of Olive	73.9	74.1	0.2	74.3	0.4
46	Residential	Waterman	South of Olive	65.0	65.2	0.2	65.4	0.4
47	Residential	Waterman	South of Olive	56.5	56.7	0.2	56.8	0.3

Note: The effect of any existing noise barriers were not taken into account in the modeling analysis.

Source: Impact Sciences, Inc.

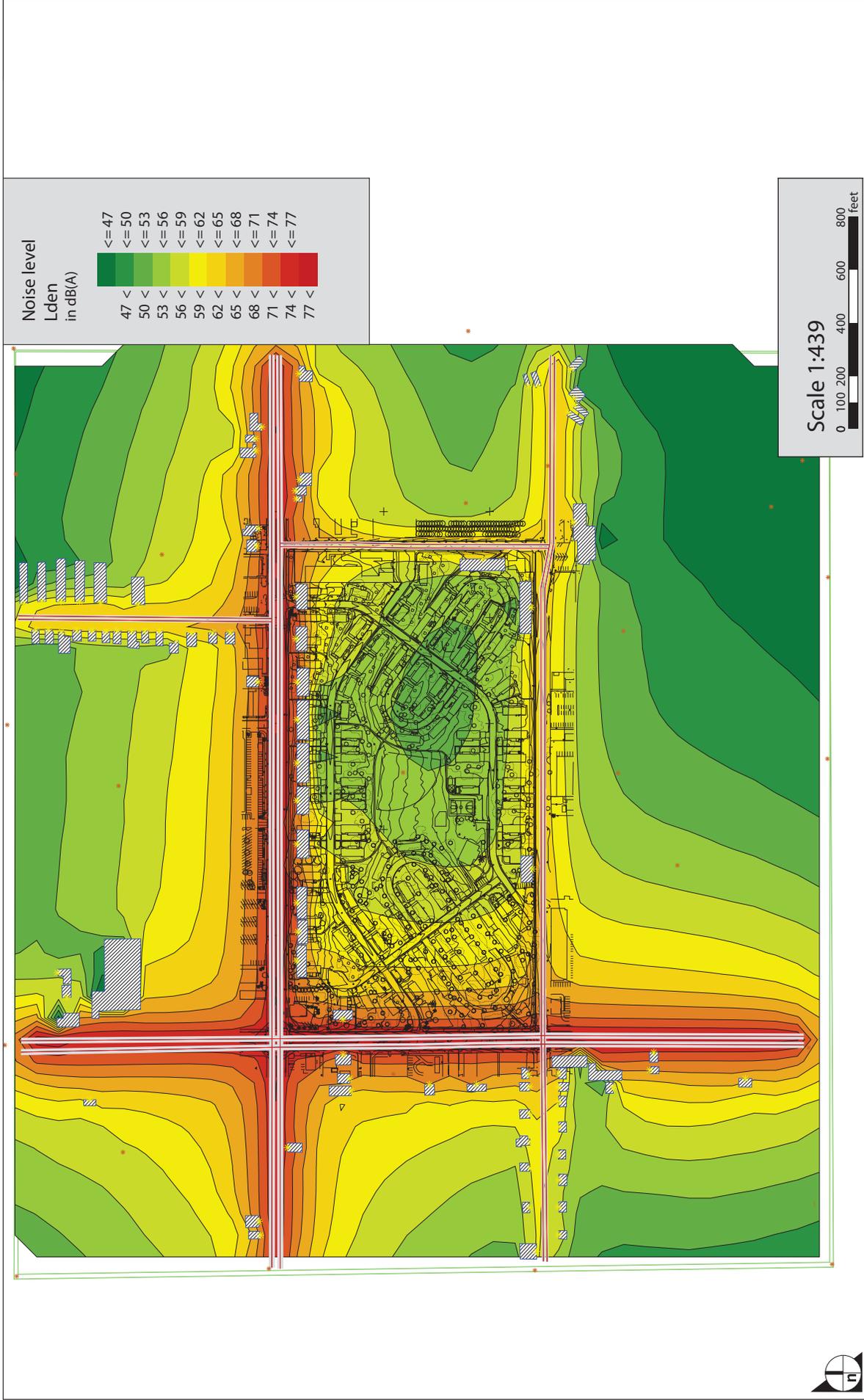
Project. As shown in Table 11, the increase in noise levels is less than 3 dB(A), except for noise levels along Olive Street under Future Buildout Year (2030) Plus Project conditions. Noise sensitive receptors along Olive Street may experience perceptible increases in noise of 3 dB(A) or more. However, the L_{dn} noise levels at these receptors are all under 65 dB(A), which is the threshold for noise sensitive uses in the City of San Bernardino. As a result, this would be considered a less than significant impact. The increase in noise levels from future buildout 2033 traffic volume growth and the incremental increase in project related noise would result in a less than significant impact.

Impact NOISE-2: Since the project includes residential uses, the project itself could expose future residents to noise levels that exceed the City of San Bernardino noise threshold of 65 dB(A) for noise sensitive uses. Noise modeling was also performed for selected on-site noise receptors that would be adjacent to the surrounding roadways, and thus be subjected to the highest levels of noise. As shown in Table 12, select on-site residents could be exposed to noise levels above 65 dB(A) along Waterman Avenue and Baseline Street. This is considered a potentially significant impact and would require



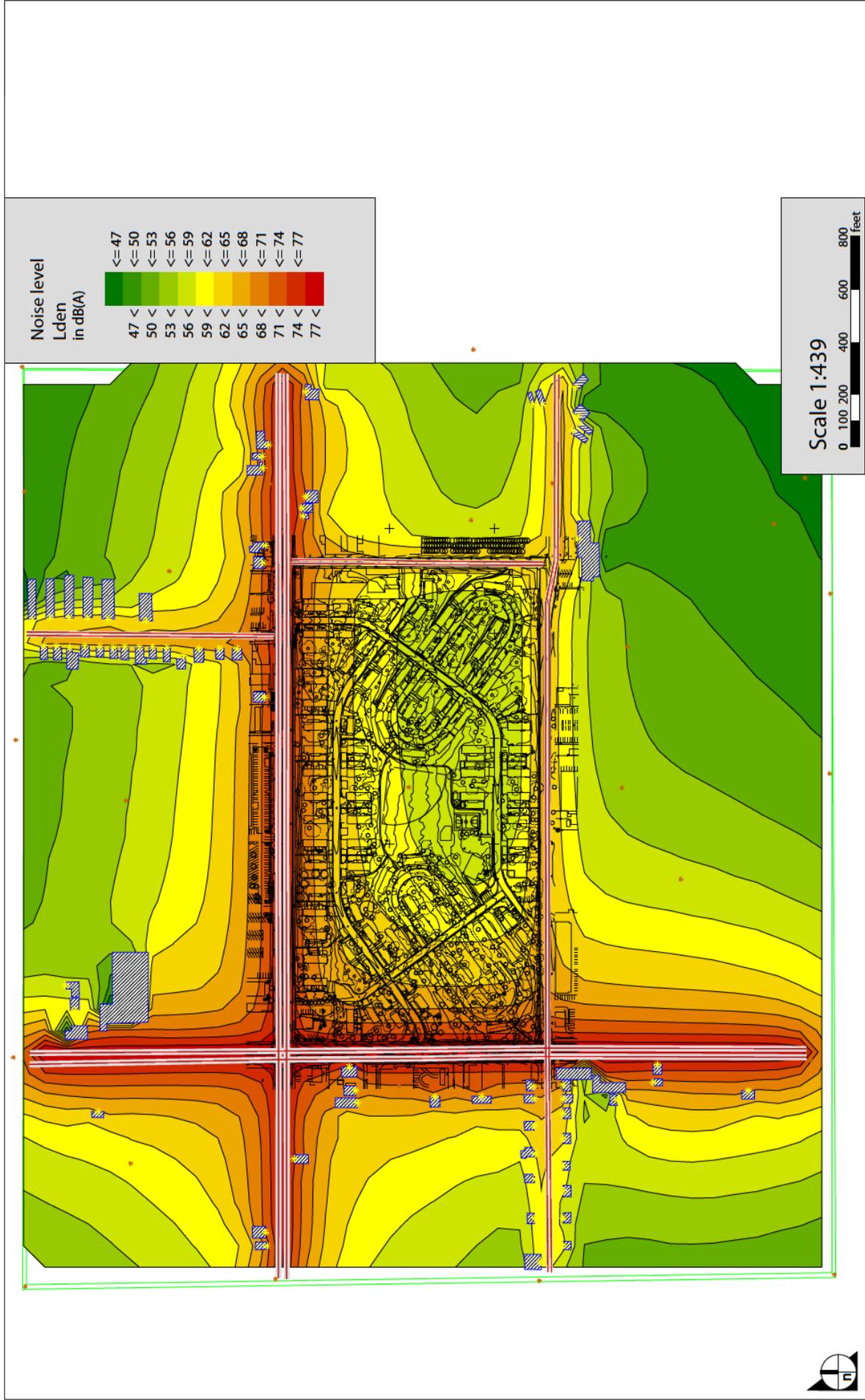
Source: Impact Sciences, Inc., 2011.

FIGURE 16
 FUTURE (2013) ROADWAY NOISE CONTOURS - WITHOUT PROJECT



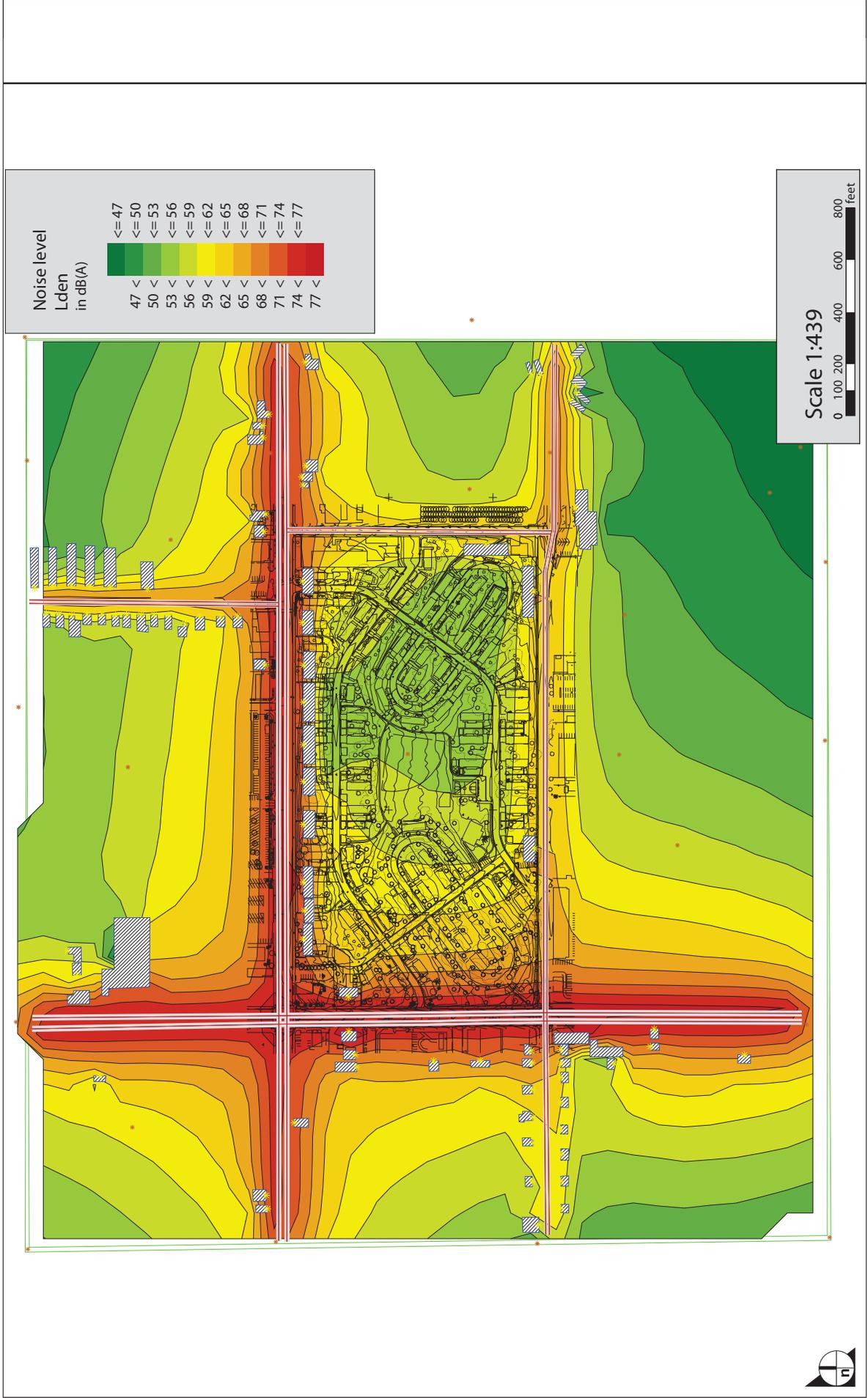
Source: Impact Sciences, Inc., 2011.

FIGURE 17
FUTURE (2013) ROADWAY NOISE CONTOURS - WITH PROJECT



Source: Impact Sciences, Inc., 2011.

FIGURE 18
CUMULATIVE FUTURE (2030) ROADWAY NOISE CONTOURS - WITHOUT PROJECT



Source: Impact Sciences, Inc., 2011.

FIGURE 19
CUMULATIVE FUTURE (2030) ROADWAY NOISE CONTOURS - WITH PROJECT

TABLE 11 *SUMMARY OF FUTURE BUILDOUT YEAR (2030) NOISE LEVELS NEAR THE PROJECT SITE*

Model ID	Receptor Type	Roadway	Road Segment	Maximum Estimated Noise Level L _{dn} (dB(A))				
				Existing	Future Without Project		Future Plus Project	
					Estimated Noise Level	Change from Existing	Estimated Noise Level	Change from Existing
28	Residential	Baseline	At La Junita	69.7	71.5	1.8	72.3	2.6
29	Residential	Baseline	East of La Junita	70.3	72.1	1.8	72.9	2.6
30	Residential	Baseline	East of La Junita	69.5	71.2	1.7	72.1	2.6
31	Residential	Baseline	East of La Junita	69.2	71.0	1.8	71.8	2.6
32	Residential	Baseline	East of La Junita	71.4	73.3	1.9	74.0	2.6
33	Residential	Baseline	East of La Junita	69.1	70.5	1.4	71.7	2.6
34	Residential	Baseline	East of La Junita	69.4	70.7	1.3	72.0	2.6
35	Residential	Baseline	East of La Junita	67.9	69.1	1.2	70.4	2.5
36	Residential	Baseline	East of La Junita	67.0	68.2	1.2	69.5	2.5
7	Residential	Baseline	West of Crestview	70.0	71.9	1.9	72.9	2.9
1	Residential	Baseline	West of Waterman	70.1	72.0	1.9	72.8	2.7
2	Residential	Baseline	West of Waterman	69.9	71.8	1.9	72.6	2.7
68	Residential	Baseline	West of Waterman	72.4	73.5	1.1	75.1	2.7
8	Residential	Crestview	North of Baseline	63.3	65.2	1.9	66.0	2.7
9	Residential	Crestview	North of Baseline	62.3	64.3	2.0	65.0	2.7
10	Residential	Crestview	North of Baseline	61.6	63.6	2.0	64.1	2.5
11	Residential	Crestview	North of Baseline	58.2	60.2	2.0	60.4	2.2
12	Residential	Crestview	North of Baseline	61.7	63.8	2.1	64.1	2.4
13	Residential	Crestview	North of Baseline	61.7	63.8	2.1	64.0	2.3
14	Residential	Crestview	North of Baseline	61.5	63.6	2.1	63.8	2.3
15	Residential	Crestview	North of Baseline	61.4	63.5	2.1	63.7	2.3
16	Residential	Crestview	North of Baseline	61.1	63.2	2.1	63.3	2.2
17	Residential	Crestview	North of Baseline	61.4	63.5	2.1	63.6	2.2
18	Residential	Crestview	North of Baseline	61.4	63.6	2.2	63.6	2.2
19	Residential	Crestview	North of Baseline	60.5	62.7	2.2	62.7	2.2
20	Residential	Crestview	North of Baseline	61.1	63.3	2.2	63.3	2.2
21	Residential	Crestview	North of Baseline	60.8	63.0	2.2	63.0	2.2
22	School	Crestview	North of Baseline	58.6	60.7	2.1	60.8	2.2
23	School	Crestview	North of Baseline	59.0	61.1	2.1	61.1	2.1
24	School	Crestview	North of Baseline	59.3	61.4	2.1	61.4	2.1

TABLE 11 *SUMMARY OF FUTURE BUILDOUT YEAR (2030) NOISE LEVELS NEAR THE PROJECT SITE*
(CONTINUED)

Model ID	Receptor Type	Roadway	Road Segment	Maximum Estimated Noise Level L _{dn} (dB(A))				
				Existing	Future Without Project		Future Plus Project	
					Estimated Noise Level	Change from Existing	Estimated Noise Level	Change from Existing
25	School	Crestview	North of Baseline	59.5	61.6	2.1	61.6	2.1
26	School	Crestview	North of Baseline	59.9	62.0	2.1	62.0	2.1
27	School	Crestview	North of Baseline	60.7	62.8	2.1	62.9	2.2
43	Church	Olive	At La Junita	56.5	58.5	2.0	59.8	3.3
37	Residential	Olive	East of La Junita	52.7	54.9	2.2	55.5	2.8
38	Residential	Olive	East of La Junita	57.0	59.4	2.4	60.3	3.3
39	Residential	Olive	East of La Junita	57.3	59.3	2.0	60.6	3.3
40	Residential	Olive	East of La Junita	55.2	57.3	2.1	58.4	3.2
41	Residential	Olive	East of La Junita	55.2	57.3	2.1	58.4	3.2
42	Residential	Olive	East of La Junita	55.7	57.7	2.0	59.0	3.3
48	Residential	Olive	West of Waterman	61.5	63.9	2.4	64.3	2.8
49	Residential	Olive	West of Waterman	65.5	68.0	2.5	68.2	2.7
50	Residential	Olive	West of Waterman	60.9	63.3	2.4	63.7	2.8
51	Residential	Olive	West of Waterman	62.9	65.4	2.5	65.6	2.7
52	Residential	Olive	West of Waterman	59.5	61.9	2.4	62.4	2.9
53	Residential	Olive	West of Waterman	60.0	62.3	2.3	62.7	2.7
54	Residential	Olive	West of Waterman	58.0	60.3	2.3	61.0	3.0
55	Residential	Olive	West of Waterman	58.8	61.0	2.2	61.5	2.7
56	Residential	Olive	West of Waterman	56.7	58.8	2.1	59.8	3.1
57	Residential	Olive	West of Waterman	57.9	60.0	2.1	60.7	2.8
58	Residential	Olive	West of Waterman	56.1	58.1	2.0	59.3	3.2
59	Residential	Olive	West of Waterman	56.8	58.9	2.1	59.6	2.8
60	Residential	Olive	West of Waterman	55.6	57.5	1.9	58.8	3.2
61	Residential	Olive	West of Waterman	55.1	57.0	1.9	58.6	3.5
62	Residential	Olive	West of Waterman	58.1	60.1	2.0	60.9	2.8
64	Residential	Waterman	Between Baseline & Olive	65.8	68.4	2.6	68.5	2.7
3	Residential	Waterman	North of Baseline	61.8	64.4	2.6	64.5	2.7
5	Residential	Waterman	North of Baseline	56.1	58.7	2.6	58.8	2.7
6	Residential	Waterman	North of Baseline	53.7	56.3	2.6	56.4	2.7
63	Residential	Waterman	North of Olive	65.1	67.7	2.6	67.8	2.7

TABLE 11 *SUMMARY OF FUTURE BUILDOUT YEAR (2030) NOISE LEVELS NEAR THE PROJECT SITE*
(CONTINUED)

Model ID	Receptor Type	Roadway	Road Segment	Existing	Maximum Estimated Noise Level L _{dn} (dB(A))			
					Future Without Project		Future Plus Project	
					Estimated Noise Level	Change from Existing	Estimated Noise Level	Change from Existing
65	Residential	Waterman	South of Baseline	63.1	65.6	2.5	65.9	2.8
66	Church	Waterman	South of Baseline	73.6	76.2	2.6	76.4	2.8
67	Residential	Waterman	South of Baseline	65.0	67.5	2.5	67.7	2.7
44	Residential	Waterman	South of Olive	64.9	67.5	2.6	67.6	2.7
45	Residential	Waterman	South of Olive	73.9	76.5	2.6	76.6	2.7
46	Residential	Waterman	South of Olive	65.0	67.6	2.6	67.7	2.7
47	Residential	Waterman	South of Olive	56.5	59.0	2.5	59.1	2.6

Note: The effect of any existing noise barriers were not taken into account in the modeling analysis.
Source: Impact Sciences, Inc.

TABLE 12 *SUMMARY OF FUTURE 2030 NOISE LEVELS FOR SELECT ON-SITE PROJECT RESIDENTS*

Model ID	Receptor Type	Roadway	Future Opening Year (2013) Noise Level L _{dn} (dB(A))	Future Buildout Year (2030) Noise Level L _{dn} (dB(A))
69	Residential	Waterman	70.9	73.2
70	Residential	Baseline	70.3	72.6
76	Residential	Baseline	69.7	71.9
77	Residential	Baseline	69.7	71.9
78	Residential	Baseline	69.2	71.4
79	Residential	Baseline	69.2	71.4
80	Residential	Baseline	69.3	71.5
81	Residential	Baseline	69.3	71.5
82	Residential	Baseline	69.3	71.5
71	Residential	Baseline	69.7	71.9
72	Residential	Baseline	69.6	71.9
73	Residential	La Junita	59.6	61.9
74	Residential	Olive	61.5	63.4
75	Residential	Olive	62.4	64.3

Source: Impact Sciences, Inc.

implementation of mitigation measures NOISE-2a and 2b, below, to reduce the impact to a less-than-significant level.

Mitigation Measure NOISE-2a: The project shall be required to implement the following noise reduction features on Baseline Street and Waterman Avenue.

- ◆ The travel lane widths adjacent to the project site will be reduced from 12 feet down to 10 feet.
- ◆ On-street parking shall be provided in areas adjacent to the project site.
- ◆ Bicycle lanes shall be provided on Baseline Street.
- ◆ A raised center median with dense ground vegetation or ground cover shall be provided.
- ◆ Trees and ground vegetation or ground cover shall be provided between the proposed residential buildings and travel lanes.
- ◆ Sidewalks shall be setback approximately 8 feet in areas adjacent to the project site.
- ◆ One additional signalized intersection and one relocated intersection, compared to existing conditions, shall be added adjacent to the project site.
- ◆ The signalized intersection along Baseline Street adjacent to the project site, including the two additional proposed intersections, shall be set in progression such that vehicle speeds are reduced to approximately 30-35 miles per hour.

Mitigation Measure NOISE-2b: The pavement along Baseline Street and Waterman Avenue in the area adjacent to the project site shall be upgraded with features and materials that reduce vehicle noise according to the following parameters.

- ◆ The pavement shall be upgraded with “quiet pavement” materials, such as rubberized pavement.
- ◆ The project site shall include planter strips along Baseline Street with dense vegetation or ground cover.
- ◆ The project site shall include “sitting walls” with landscaping materials along Baseline Street approximately 2 to 2.5 feet in height, that will act as noise barriers, with landscaping material placed toward the proposed residential buildings.

Mitigation measures NOISE-2a and 2b would reduce impacts to the senior housing units with balconies facing Waterman Avenue to a less than significant level. While the modeled mitigated noise levels would still be above the allowable sound level of 65 dB(A), the model is not able to include all the mitigation measures listed. If the effects of the remaining mitigation measures are included, the noise levels for on-site receptors along Waterman Avenue would be reduced to a level compliant with applicable noise ordinances.

Further, mitigation measures NOISE-2a and 2b would reduce impacts to the residential units along Baseline Street. Mitigation measures cannot be fully modeled using the SoundPlan noise model because no option exists to account for “quiet pavement,” such as rubberized pavement, which is reasonably estimated to achieve noise reductions of 4 to 6 dB(A) or more. Based on this information, mitigated noise levels to future on-site project residents are summarized in Table 13, Summary of Future

(2030) Mitigated Noise Levels for On-Site Project Residents along Baseline Street. As shown, the noise levels would be mitigated to less than significant.

For the reasons stated above, the proposed project will result in a less than significant impact with incorporation of mitigation measures NOISE-1 and 2a and 2b. (*Less than significant with mitigation incorporated*)

b) Would the project result in the exposure of persons to or generation of noise levels in excess of standards established in the City's General Plan or Development Code, or applicable standards of other agencies?

As discussed in a) above, the proposed project would result in significant impacts associated with construction and operational noise. However, the incorporation of mitigation measures NOISE-1 and 2a and 2b, described above, would reduce construction and operational noise impacts to a less than significant level. (*Less than significant with mitigation incorporated*)

c) Would the project result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Construction Vibration

Construction activities can generate varying degrees of ground vibration, depending on the construction procedures and the construction equipment. The primary and most intensive vibration source associated with the development of the proposed project would be associated with the use of haul trucks and dozers during construction.⁴⁴ On-road haul trucks carrying demolition debris, soil, and building materials to and from the site would be the largest generator of ground-borne vibration since they would travel over roadways that are adjacent to sensitive land uses. Sensitive land uses located in the immediate vicinity of the project site include residences along Baseline Street and Waterman Avenue.

On-road trucks carrying demolition debris, soil, and building materials may also result in vibration impacts as they travel along roadways. Vibration impacts associated with on-road trucks only occur during one-half of a round trip, since trucks usually arrive or depart a construction site in an unloaded state. The operation of loaded trucks would result in a vibration velocity level of 82 VdB measured at 35 feet. Thus, the vibration levels generated by loaded trucks would be experienced infrequently and for only a short time as a loaded truck travels along a roadway in the immediate vicinity of a sensitive receptor.⁴⁵ The operation of dozers within 100 feet of sensitive land uses could generate infrequent vibration levels of up to 69 VdB. The vibration levels generated by these equipment would be experienced infrequently because construction equipment generally do not operate continuously in a single location.

Based on the above analysis, loaded haul trucks and dozers would result in vibration impacts that are under the FTA vibration thresholds for both human annoyance and structural damage for infrequent vibration events and would therefore be less than significant.

⁴⁴ Based on the formula $VdB = VdB(25ft) - 30 \times \text{LOG}_{10}(D/25)$, where D is equal to the distance.

⁴⁵ Federal Transit Administration, *Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06)*, (2006) 12-11 and 12-12.

TABLE 13 **SUMMARY OF FUTURE (2030) MITIGATED NOISE LEVELS FOR ON-SITE PROJECT RESIDENTS ALONG BASELINE STREET**

Model ID	Receptor Type	Roadway	Modeled Reduced Noise Levels ^a L _{dn} (dB(A))	Noise Reduction from Quiet Pavement L _{dn} (dB(A))	Estimated Mitigated Noise Level L _{dn} (dB(A))
70	Residential	Baseline	67.8	-4 to -6	64
76	Residential	Baseline	68.8	-4 to -6	65
77	Residential	Baseline	68.2	-4 to -6	64
78	Residential	Baseline	68.6	-4 to -6	65
79	Residential	Baseline	68.6	-4 to -6	65
80	Residential	Baseline	68.6	-4 to -6	65
81	Residential	Baseline	68.7	-4 to -6	65
82	Residential	Baseline	68.6	-4 to -6	56
71	Residential	Baseline	69.1	-4 to -6	65
72	Residential	Baseline	69.0	-4 to -6	65

^a Includes only those specific mitigation measures from MM NOISE-2a and 2b in which the model has the capability to account for the reduction in noise. For example, this column includes the effects of reduced vehicle speeds, decreased travel lane widths, center median, and increased distance to the roadway from the siting of sidewalks and bicycle lanes. The additional measures would reduce noise levels to a greater extent than shown in this table.

Source: Impact Sciences, Inc.

Operational Vibration

The proposed project would not include any stationary equipment that would generate ground-borne vibration that would cause an annoyance to humans or any structural damage to buildings. During operation, the project would be served by trash trucks that would collect municipal solid waste. However, these trash trucks would be similar to trash trucks that already serve the existing surrounding residential and commercial land uses. Furthermore, as discussed under the construction impacts, loaded haul trucks would not result in vibration levels that exceed the thresholds of significance. Therefore, operational vibration events would be less than significant.

Therefore, the proposed project would have a less than significant impact associated with excessive groundborne vibration or noise levels. (*Less than significant*)

d) Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

As previously discussed, operation of the project would result in an incremental increase in area traffic volumes above those that would occur without the project. Noise generated by vehicular traffic traveling on the local roadway network represents the predominant and most consistent noise source for the project. The increase in traffic would result in a permanent increase in ambient noise levels in the project vicinity above existing levels. As shown in Table 12, the increase in noise levels would be un-

der 3 dB(A) except along Olive Street where the increase could be 3.5 dB(A), which is above the threshold of human perception. However, noise levels at sensitive receptors along Olive Street are expected to be below the City of San Bernardino noise threshold of 65 dB(A) for noise sensitive uses because of the relatively low traffic volumes. Therefore, this would not be considered a substantial noise increase and the impact is considered to be less than significant. (*Less than significant*)

e) *Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

Temporary or periodic increases in ambient noise levels would result from construction activity. As previously discussed, the City regulates noise-generating activities through the Municipal Code Section 8.54.020, which limits the hours of construction activities. As shown in Table 9, construction noise would be approximately 80.5 dB(A) Lmax and 76.0 dB(A) Leq at noise sensitive land uses. Mitigation of construction noise impacts to a level that is less than significant would be conducted through the enforcement of the San Bernardino Municipal Code and in a broader sense through the policies of the General Plan Noise Element. The project would be required to implement mitigation measures NOISE-1 and NOISE-2 to reduce noise impacts to less than significant.

The California Division of Occupational Health and Safety (CalOSHA) provides guidelines to protect the hearing of people employed in the State of California. An employer is required to administer a continuing effective hearing conservation program whenever employee noise exposures equal or exceed an 8-hour time-weighted average sound level of 85.0 dB(A) (referred to as the “action level”), or equivalently, a dose of 50 percent.⁴⁶ Furthermore, according to the California Department of Transportation (Caltrans), noises levels of 85.0 dB(A) are considered “normal” noise level for freeways.⁴⁷ As shown in Table 9, construction activities would not generate noise levels, even on a temporary or short-term basis, that would exceed the CalOSHA noise “action level” for employers or the Caltrans “normal” noise level for freeways. Therefore, it is reasonably concluded that the temporary and periodic construction noise levels associated with the project would not pose a risk to human hearing.

Although temporary or periodic increases in ambient noise levels would result from construction activity, implementation of Mitigation Measures NOISE-1 and 2 would reduce this impact to a less than significant level. (*Less than significant with mitigation incorporated*)

f) *For a project located within an airport land use plan or Airport Influence Area, would the project expose people residing or working in the project area to excessive noise levels?*

The project is not located within an airport land use plan or Airport Influence Area, therefore it would not expose people residing or working in the project area to excessive noise levels. Therefore, no impact would occur. (*No impact*)

Noise Mitigation Measures:

NOISE-1: The project shall comply with the following construction best management practices:

⁴⁶ California Code of Regulations, Title 8, Section 5097, Hearing Conservation Program.

⁴⁷ California Department of Transportation, *Caltrans Safety Manual*, Chapter 13 Hearing Protection Program, (1996) 13-5.

- ◆ Two weeks prior to the commencement of construction for any phase, notification must be provided to surrounding land uses within 1,000 feet of the project site disclosing the construction schedule, including various types of activities that would be occurring throughout the duration of each construction phase.
- ◆ Provide designated truck routes that minimize impacts on local traffic and neighborhoods.
- ◆ Schedule high noise-producing activities between the hours of 8:00 AM and 4:00 PM Monday through Saturday to minimize disruption to neighboring residential homes.
- ◆ Ensure that construction equipment is properly muffled according to industry standards and in good working condition.
- ◆ Place noise-generating construction equipment and locate construction staging areas away from residential homes.
- ◆ Use electric air compressors and similar power tools rather than diesel equipment to the extent that the necessary equipment are commercial available.
- ◆ Construction-related equipment, including heavy-duty equipment, motor vehicles, generators, air compressors, and other portable equipment, shall be turned off when not in use for more than 30 minutes.
- ◆ Construction vehicles and equipment outfitted with back-up alarms shall utilize “smart back-up alarms” that will generate sound at least five decibels louder than the surrounding noise instead of fixed-decibel back-up alarms.
- ◆ Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow for surrounding residents to contact the job superintendent. If the superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action to the reporting party.

NOISE-2a: The project shall be required to implement the following noise reduction features.

- ◆ The travel lane widths on Baseline Street and Waterman Avenue adjacent to the project site will be reduced from 12 feet down to 10 feet.
- ◆ On-street parking shall be provided along Baseline Street and Waterman Avenue in areas adjacent to the project site.
- ◆ Bicycle lanes shall be provided on Baseline Street.
- ◆ A raised center median with dense ground vegetation or ground cover shall be provided along Baseline Street.
- ◆ Trees and ground vegetation or ground cover shall be provided along Baseline Street between the proposed residential buildings and travel lanes.

- ◆ Sidewalks shall be setback approximately 8 feet along Baseline Street in areas adjacent to the project site.
- ◆ One additional signalized intersection and one relocated signalized intersection, compared to existing conditions, shall be added to Baseline Street adjacent to the project site.
- ◆ The signalized intersection along Baseline Street adjacent to the project site, including the two additional proposed intersections, shall be set in progression such that vehicle speeds are reduced to approximately 30-35 miles per hour.

NOISE-2b: The pavement along Baseline Street and Waterman Avenue in the area adjacent to the project site shall be upgraded with features and materials that reduce vehicle noise according to the following parameters.

- ◆ The pavement shall be upgraded with “quiet pavement” materials, such as rubberized pavement.
- ◆ The project site shall include planter strips along Baseline Street with dense vegetation or ground cover.
- ◆ The project site shall include “sitting walls” with landscaping materials along Baseline Street approximately 2 to 2.5 feet in height, that will act as noise barriers, with landscaping material placed toward the proposed residential buildings.

XII. POPULATION AND HOUSING

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Remove existing housing and displace substantial numbers of people or existing housing units, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

As of 2010, the population of the City of San Bernardino was 209,924. With 65,401 total housing units and 59,283 occupied units, the persons-per-household rate is currently 3.54.⁴⁸ The existing project site is currently occupied by 844 residents of the 252 existing dwelling units (3.35 persons per household), which include single-story duplexes and multi-family townhouses. There is a high level of poverty in the project area, with 30 percent of the households within a 5-minute drive earning less than \$15,000 per year, and an additional 16 percent earning between \$15,000 and \$24,999 per year.

Discussion

a) *Would the project 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)?*

As described in the discussion under IX.b above, the project is consistent with the General Plan and the adopted General Plan Land Use Map and would not induce substantial direct population growth which is beyond what is anticipated with the planned buildout of the City. The additional dwelling units would result in approximately 533 additional residents of the project site, based on the current persons per household estimate of 3.35. In a city that has a population of approximately 209,924, the addition of 159 dwelling units constitutes a relatively small project. The project site is already served by roads and other infrastructure to which the proposed project will connect. For the reasons stated above, the project would not induce substantial population growth either directly or indirectly. Therefore, impacts are anticipated to be less than significant. *(Less than significant)*

b) *Would the project remove existing housing and displace substantial numbers of people or existing housing units, necessitating the construction of replacement housing elsewhere?*

The project site is currently occupied by 844 residents of the 252 existing housing units. Although all dwelling units will be demolished, displacing residents, the project will occur in five phases as described in the Project Description on pages 4-10 of this document above.

⁴⁸ U.S Census Bureau, 2010, *Profile of General Population and Housing Characteristics: 2010 for San Bernardino City*, http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP1&prodType=table, accessed on May 13, 2011.

A relocation plan, provided in Appendix L, has been prepared to ensure residents are provided with temporary housing during project construction. The relocation plan includes the projected dates of displacement, an analysis of the relocation needs and relocation housing resources, a description of the relocation advisory services program, and temporary relocation plans. The project will replace all existing housing and add up to an additional 159 units. Following construction, there will be no need to construct replacement housing elsewhere. Therefore, the impacts are anticipated to be less than significant. (*Less than significant*)

Population and Housing Mitigation Measures:

None required.

XIII. PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of 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:				
Fire protection, including medical aid?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Parks or other recreational facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other governmental services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

Fire Protection

The City of San Bernardino Fire Department provides fire protection and emergency medical services in the City. The Fire Department provides emergency medical care (with emergency medical team personnel and paramedics), "HazMat" (hazardous materials) teams and resources, and aircraft rescue and firefighting services. The Fire Department also conducts fire safety inspections of businesses, and educates the public about safety measures through school and disaster preparedness programs.⁴⁹

The City of San Bernardino Fire Department (SBFD) has 12 fire stations. The nearest fire stations to the project site are Fire Station No. 221 located at 200 East 3rd Street and Station No. 226 located at 1920 N. Del Rosa Avenue, approximately 1 mile southwest and 2 miles northeast of the project site, respectively.⁵⁰ The current total number of personnel available to respond to emergencies, including two battalion Chief Officers, is 51 divided among the 12 stations.⁵¹ The SBFD standard for response times, from the time a 911 call is received to the time a unit arrives on scene, is 7:59 minutes or less.⁵² Response time for a unit varies and depends on the location of the response site. The average response time in the proposed project area is 5.76 minutes from the nearest fire station and 5.82 minutes from

⁴⁹ City of San Bernardino Website, *San Bernardino City Fire Department Statistics*, http://www.ci.san-bernardino.ca.us/cityhall/fire/sbfd_facts.asp, accessed on April 7, 2011.

⁵⁰ City of San Bernardino Website, *San Bernardino City Fire Department Statistics*, <http://www.ci.san-bernardino.ca.us/cityhall/fire/stations.asp>, accessed on April 7, 2011.

⁵¹ City of San Bernardino Website, *San Bernardino City Fire Department Statistics*, http://www.ci.san-bernardino.ca.us/cityhall/fire/sbfd_facts.asp, accessed on April 7, 2011.

⁵² Eric Esquivel, Division Chief, City of San Bernardino Fire Department, Personal communication with Heather Martinelli, June 7, 2011.

the second nearest fire station. Both of these average response times fall within the SBFD standard for response times.⁵³

Police Protection

The City of San Bernardino Police Department (SBPD) provides law enforcement services within the city limits. The City of San Bernardino is divided into four Patrol Districts. The project site is located in the Southeast District. The police station nearest the project site is the main police station located at 710 North D Street. As crime and calls for service change over time, the District's boundaries and staffing assignments are evaluated to maintain a balance of service across the City.

The SBPD classifies calls into the following five call types: Priority E (immediate life threatening emergencies), Priority 1 (very serious and felony crimes in progress), Priority 2 (potentially serious calls such as in-progress misdemeanors), Priority 3 (disturbance of no known immediate danger) and Priority 4 (property crimes not in progress). From June 21, 2010 to June 20, 2011 the average response times for the above call types were as follows:⁵⁴

- ◆ Priority E - 4.95 minutes
- ◆ Priority 1 - 13.95 minutes
- ◆ Priority 2 - 30.39 minutes
- ◆ Priority 3 - 55.64 minutes
- ◆ Priority 4 - 64.31 minutes

Staffing for the department is not based on a particular ratio of "officers per thousand" but is determined to provide the ability to conduct proactive community-oriented policing and problem solving. The SBPD reviews staffing needs on a yearly basis and adjusts service levels as needed to maintain an adequate level of public protection.⁵⁵

Schools

The project site is located within the boundary of the San Bernardino City Unified School District (SBCUSD). With over 52,000 students, SBCUSD is the eighth-largest school district in California. The District is comprised of 44 elementary schools, ten middle schools, seven high schools, three special education schools and one adult school. The schools that currently serve the project site are E. Neal Roberts Elementary, Arrowview Middle School, and Pacific High School. E. Neal Roberts Elementary and Arrowview Middle School are currently near capacity.⁵⁶ Other schools located near the project site include the San Bernardino Adult School, Sierra High School, Bing Wong Elementary, and Bradley Elementary. In order to meet the needs of the population, ten schools within the District offer an English/Spanish Dual Immersion program. Additionally, the District offers a variety of Re-

⁵³ Eric Esquivel, Division Chief, City of San Bernardino Fire Department, Personal communication with Heather Martinelli, June 8, 2011.

⁵⁴ Tiffany Emon, City of San Bernardino Police Department, Personal communication with Heather Martinelli, June 23, 2011.

⁵⁵ Brian Pellis, District Resources Officer, Southeast District, City of San Bernardino Police Department, Personal communication with Heather Martinelli, April 19, 2011.

⁵⁶ Tim Deland, Facilities Management, SBCUSD, Personal communication with Heather Martinelli, May 27, 2011.

gional Occupational Program (ROP) courses designed to provide career and technical training to prepare students for employment in the local area.⁵⁷

Parks or Other Recreational Facilities

The City's Parks, Recreation and Community Services Department manages a total of 52 developed parks and recreational facilities that encompass approximately 540 acres. A joint agreement with the local schools allows the City to offer recreational services on local campuses, including the Tiny Tot program, Senior Citizen leisure programs, and active and passive programs for all age groups. The City also operates seven community centers that offer a variety of leisure and social activities, such as youth and adult sports, teen and youth clubs, tutoring, arts and crafts, senior nutrition, family night, etc.⁵⁸

The City uses the State Quimby Act and its Development Code for fees and land dedications as well as the Capital Improvement Program to establish standards and schedules for acquisition and development of new park or rehabilitation of existing parks and recreation facilities. The City's park acreage standard is 5 acres per 1,000 residents, which exceeds the State's Quimby Act standard of four acres per 1,000 residents. The Chapter 19.30 of the Development Code provides for the payment of a fee for each new residential dwelling unit constructed.⁵⁹

Based on the adopted park standard of five acres per 1,000 residents, build-out of the City would result in a need for approximately 1,596 acres of parkland. The General Plan designates 469 acres of public parks. Therefore, future build-out of the General Plan would result in a shortfall of 1,127 acres.⁶⁰ However, the projected shortfall is lessened somewhat because parkland total areas do not include the three regional parks, which total 158 acres. Additionally, many school sites, community centers, and senior centers throughout the City are available for recreational activities. Furthermore, the City designates approximately 620 acres of undeveloped open space parkland and 664 acres of public and commercial recreation, which includes private recreational facilities, and an additional 1,312 acres of undeveloped open space and parkland and 57 acres of public and commercial recreation in the Sphere of Influence areas.

The existing project site is well-served by parks and recreational facilities, both on-site and in the surrounding area. A basketball court and single play structure are currently located on the site. Additional facilities are located at nearby schools. In addition, Secombe Lake State Recreation Area, located one mile southwest of the site, has a large water body, play fields, picnic areas and a small play area. Palm Field Park, located one mile southeast of the project site, has a baseball field and a large community garden.

Discussion

a) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental*

⁵⁷ SBUCSD, 2010, *Fact Sheet*, [<http://sbcusd.com/DocumentView.aspx?DID=9971>].

⁵⁸ City of San Bernardino, 2005, *General Plan*, pages 8-5 and 8-6.

⁵⁹ City of San Bernardino, 2005, *General Plan*, page 8-3 – 8-5.

⁶⁰ City of San Bernardino, 2005, *General Plan*, page 8-3 – 8-5.

impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire Protection?

The proposed project will increase the population of the project site by approximately 533 persons, which could increase the demand for fire protection and emergency medical services provided by the City of San Bernardino Fire Department (SBFD). As described in existing conditions, above, the average response times in the project area are within the adopted standard of 7:59 minutes. SBFD does not anticipate that the proposed project will have a negative effect on response times nor impact the ability of SBFD to provide fire and medical services. The project area is surrounded by multi-company stations, including a station located approximately 1 mile from the project site, which means that if one unit isn't available to respond to an emergency, there is another unit available to respond.⁶¹ In addition, developer impact fees are collected at the time of building permit issuance. Therefore, impacts to fire protection, including medical aid, are anticipated to be less than significant. (*Less than significant*)

Police Protection?

Although the increase in population associated with the proposed project may increase the number of police service calls and increase response times, these are not anticipated to result in significant physical impacts associated with the provision of police services.⁶² In addition, developer impact fees will be collected at the time of building permit issuance to offset project impacts. Therefore, impacts to police protection are anticipated to be less than significant. (*Less than significant*)

Schools?

The proposed project would result in a total of 159 additional units on the project site. This increase would add approximately 178 new students to SBCUSD schools, based on student generation rates used by SBCUSD. Of the schools currently serving the project site, E. Neal Roberts Elementary and Arrowview Middle School are near capacity. However by the time of project completion, SBCUSD plans to open a new elementary school in the area and will allow for additional capacity at E. Neal Roberts Elementary. In addition, SBCUSD has plans to shift some feeder elementary schools from K-5 to K-6 grade alignment, which will free up additional capacity at Arrowview Middle School. SBCUSD does not anticipate any issues in being able to house the additional students generated by the expansion. SBCUSD is prepared to provide for the temporary relocation of existing students during construction of the project.⁶³

As determined in the General Plan Update EIR, buildout of the City would result in a substantial increase in student population, which would require additional school facilities and personnel. The EIR concluded that upon implementation of General Plan policies, regulatory requirements, and standard conditions of approval, the impact to school services would be less than significant. Construction and operation of new school facilities would be funded through school impact fees assessed on new devel-

⁶¹ Eric Esquivel, Division Chief, City of San Bernardino Fire Department, Personal communication with Heather Martinelli, June 7, 2011.

⁶² Tiffany Emon, City of San Bernardino Police Department, Personal communication with Heather Martinelli, June 23, 2011.

⁶³ Tim Deland, Facilities Management, SBCUSD, Personal communication with Heather Martinelli, May 27, 2011.

opments that occur within the school district. The project would contribute school impact fees based on square footage shown on the building plans during plan check review. Therefore, impacts to schools are anticipated to be less than significant. (*Less than significant*)

Parks or Other Recreational Facilities?

The proposed project is anticipated to generate approximately 533 additional people based on a household size of 3.35 persons per household. Based on the City's policy of 5 acres of parkland per 1,000 residents, the proposed project would require an additional 2.67 acres of parkland. The proposed project would include many on-site recreation amenities, including a 45,800-square-foot recreational facility and natatorium, pedestrian-only greenways, walking paths, and three neighborhood parks with playing fields and picnic areas. These proposed facilities would far exceed the project's park/recreational facility requirement and would add much needed facilities not only for project residents but residents from the neighborhoods surrounding the project site as well. Further, residential projects are required to pay developer impact fees for Parks and Recreation which will be collected at the time of building permit issuance. Therefore, impacts to parks and other recreational facilities are anticipated to be less than significant. (*Less than significant*)

Other Governmental Services?

The proposed project would not require the use of additional governmental services beyond what has been identified above. The proposed project, with approval of the Development Code Amendment, would be consistent with the General Plan. Therefore, no impact is anticipated. (*No impact*)

Public Services Mitigation Measures:

None required.

XIV. RECREATION

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

As described in Section XII, there are a total of 52 developed parks and recreational facilities in the City of San Bernardino. Recreational services are also provided at local schools, including the Tiny Tot program, Senior Citizen leisure programs, and active and passive programs for all age groups. The City also operates seven community centers that offer a variety of leisure and social activities.⁶⁴

The existing project site is well-served by recreational facilities and amenities, both on-site and in the surrounding area. A basketball court and single play structure are currently located on the site. Additional facilities are located at nearby schools. In addition, Secombe Lake State Recreation Area, located one mile southwest of the site, has a large water body, play fields, picnic areas and a small play area. Palm Field Park, located one mile southeast of the project site, has a baseball field and a large community garden.

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?

As discussed in Section XIII, the proposed project would provide the proposed residential development with both private and common area recreational facilities on site; therefore, it would not significantly increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of any facilities would result. In fact, these proposed facilities would add much needed facilities not only for project residents but residents from the neighborhoods surrounding the project site as well. Further, implementation of policies listed in the Parks and Recreation Element of the General Plan Update, and collection of developer impact fees would ensure impacts to recreational facilities are less than significant. (*Less than significant*)

b) Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The proposed project would include the construction of on-site recreational amenities, including a 38,000-square-foot recreational facility and natatorium, pedestrian-only greenways, a walking path,

⁶⁴ City of San Bernardino, 2005, *General Plan*, pages 8-5 and 8-6.

and two neighborhood parks with playing fields, basketball courts and picnic areas. As the site is already highly urbanized and developed and sensitive environmental resources are not located onsite, the construction of these facilities would not result in an adverse physical effect on the environment. Therefore, impacts associated with the construction of recreational facilities are anticipated to be less than significant. (*Less than significant*)

Recreation Mitigation Measures:

None required.

XV. TRANSPORTATION AND TRAFFIC

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to a level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

This discussion is based on the Waterman Gardens Master Plan Traffic Impact Analysis prepared by Fehr & Peers in June 2011 and updated in July 2012 (Appendix G).

Regional access to the project site is provided by State Route 210 (SR-210), Interstate 10 (I-10), and Interstate 215 (I-215). Local access is provided by Highland Avenue, Baseline Street, Olive Street, 5th Street, E Street, Waterman Avenue, La Junita Street, and Del Rosa Drive. Vehicular access to the project site is Crestview Avenue from Baseline Street towards the far east end of the site to the north, Orange Street mid-block from La Junita Street to the east, and Orange Street mid-block from N. Waterman Avenue to the west. Internal through circulation is provided by Orange Street which runs east-west and Crestview Street which runs north-south through the site. Additional cul-de-sac roadways extend from Orange Street and Crestview Street to residences.

There are three Omnitrans transit lines that currently operate in the study area. These bus lines along the project site perimeter provide access from the project site to Routes 1, 4, and 5. Existing bicycle routes in the project study area are located along Highland Avenue and Baseline Street. The pedestri-

an network in the study area consists of sidewalks and pedestrian crosswalks, with appropriate pedestrian crossing controls at signalized intersections.

A traffic impact analysis was prepared for the project by Fehr & Peers. The traffic impact analysis uses a methodology based on research conducted by the Transportation Research Board and other authorities. Signalized and unsignalized intersection operations were evaluated using methodologies provided in Highway Capacity Manual (HCM 2000) (Transportation Research Board), are considered the state-of-the-practice methodologies for evaluating intersection operations, and are consistent with the City of San Bernardino and CMP analysis requirements.

The HCM 2000 methodology for signalized and all-way stop-controlled intersections estimates the average control delay for the vehicle at the intersection. For side-street stop-controlled intersections, the methodology estimates the control delays for each turning movement and identifies the delay for the longest delayed approach (if there is a shared lane, delay is averaged for all turning movements from that lane). After the quantitative delay estimates are complete, the methodology assigns a qualitative letter grade that represents the operations of the intersection. These grades range from level of service (LOS) A (minimal delay) to LOS F (excessive congestion). LOS E represents at-capacity operations. In the City of San Bernardino, the minimum acceptable level of service is established as LOS D for intersections. Mitigation measures are required for locations where traffic conditions show a LOS worse than the minimum acceptable LOS D.⁶⁵

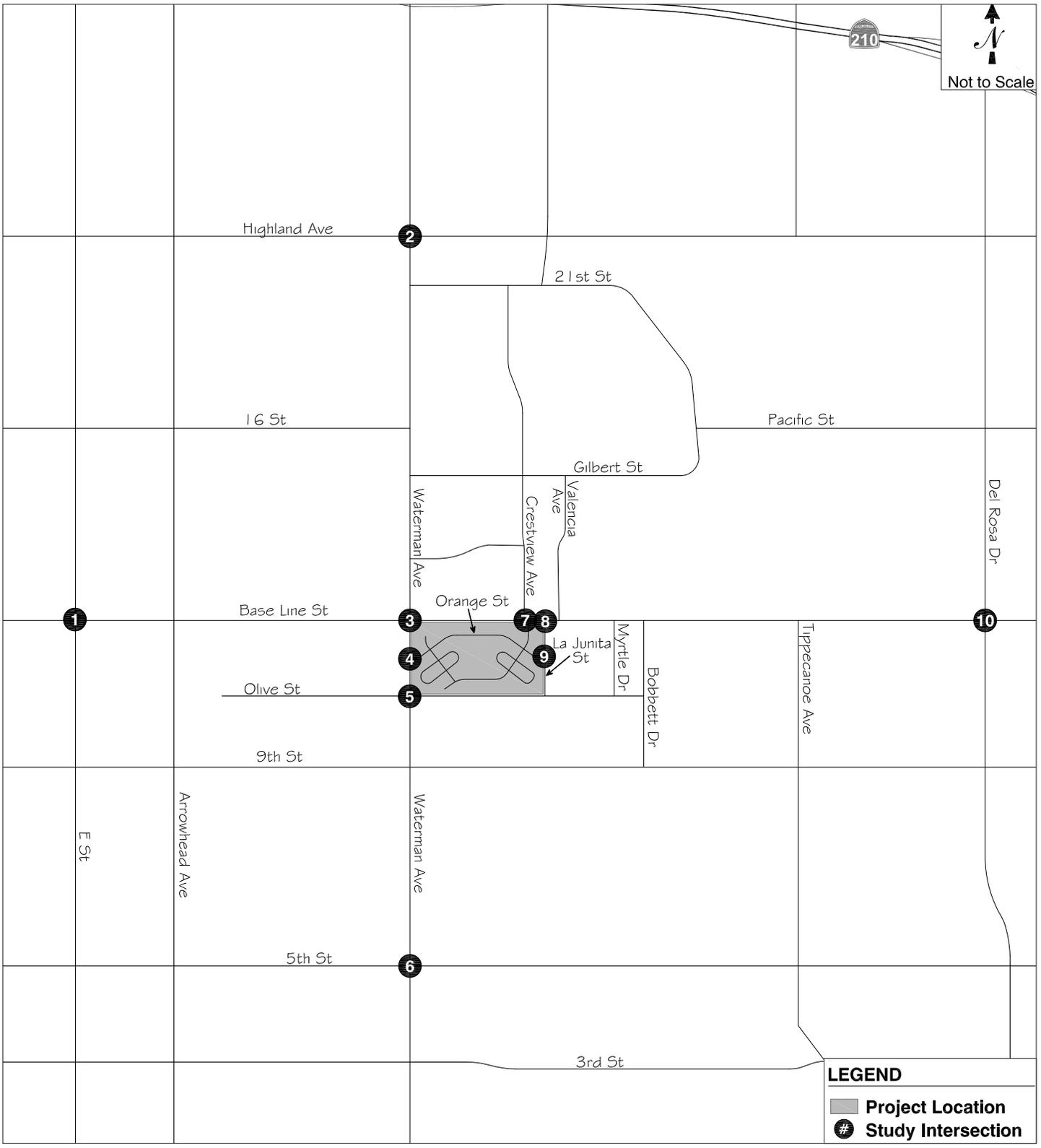
The following ten study intersections, shown in Figure 20, were selected for evaluation in the study:

- ◆ E Street at Baseline Street
- ◆ Waterman Avenue at Highland Avenue
- ◆ Waterman Avenue at Baseline Street
- ◆ Waterman Avenue at Orange Street
- ◆ Waterman Avenue at Olive Street
- ◆ Waterman Avenue at 5th Street
- ◆ Crestview Avenue at Baseline Street
- ◆ La Junta Street at Baseline Street
- ◆ La Junta Street at Orange Street
- ◆ Del Rosa Drive at Baseline Street

Existing traffic counts were collected at the study intersections in May 2011 during the morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak hours. At the time that existing traffic volumes were collected, ramp closures on I-215 at 3rd Street, 27th Street, and Highland Avenue (in the northbound direction) were closed. Waterman Avenue at Highland Avenue was also reduced to one-lane traffic in each direction. These temporary ramp and lane closures could have possibly affected the existing count volumes.⁶⁶

⁶⁵ City of San Bernardino, 2005, *General Plan*, page 6-16.

⁶⁶ Fehr & Peers, June 6, 2011, *Draft Waterman Gardens Master Plan Traffic Impact Analysis*, page 13.



Source: Fehr & Peers, 2011.

FIGURE 20
PROJECT LOCATION AND STUDY INTERSECTIONS

The existing traffic volumes, lane configurations, and signal timing information were used to evaluate operations at the study intersections for the existing AM and PM peak hour conditions, shown in Table 14 below. Existing lane configurations and peak hour traffic volumes are shown in Figure 21.

TABLE 14 *INTERSECTION LEVELS OF SERVICE: EXISTING CONDITIONS*

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay ^a	LOS	Delay	LOS
1. E Street/Baseline Street	Signalized	14.2	B	15.3	B
2. Waterman Avenue/Highland Avenue ^b	Signalized	26.7	C	28.2	C
3. Waterman Avenue/Baseline Street ^b	Signalized	21.1	C	23.8	C
4. Waterman Avenue/Orange Street	SSSC ^c	32.9	D	127.6	F
5. Waterman Avenue/Olive Street	SSSC ^c	30.2	D	48.3	E
6. Waterman Avenue/5 th Street ^b	Signalized	17.4	B	20.3	C
7. Crestview Avenue/Baseline Street	Signalized	3.4	A	3.3	A
8. La Junita Street/Baseline Street	SSSC ^c	15.2	C	18.0	C
9. La Junita Street/Orange Street	SSSC ^c	8.7	A	8.8	A
10. Del Rosa Drive/Baseline Street	Signalized	25.3	C	23.1	C

^a Delay for intersections based on application of *2000 Highway Capacity Manual* Methodology. Delay was calculated using Synchro 6.0 software.

^b CMP intersection

^c SSSC= Side Street Stop Sign Controlled

Source: Fehr & Peers, 2011.

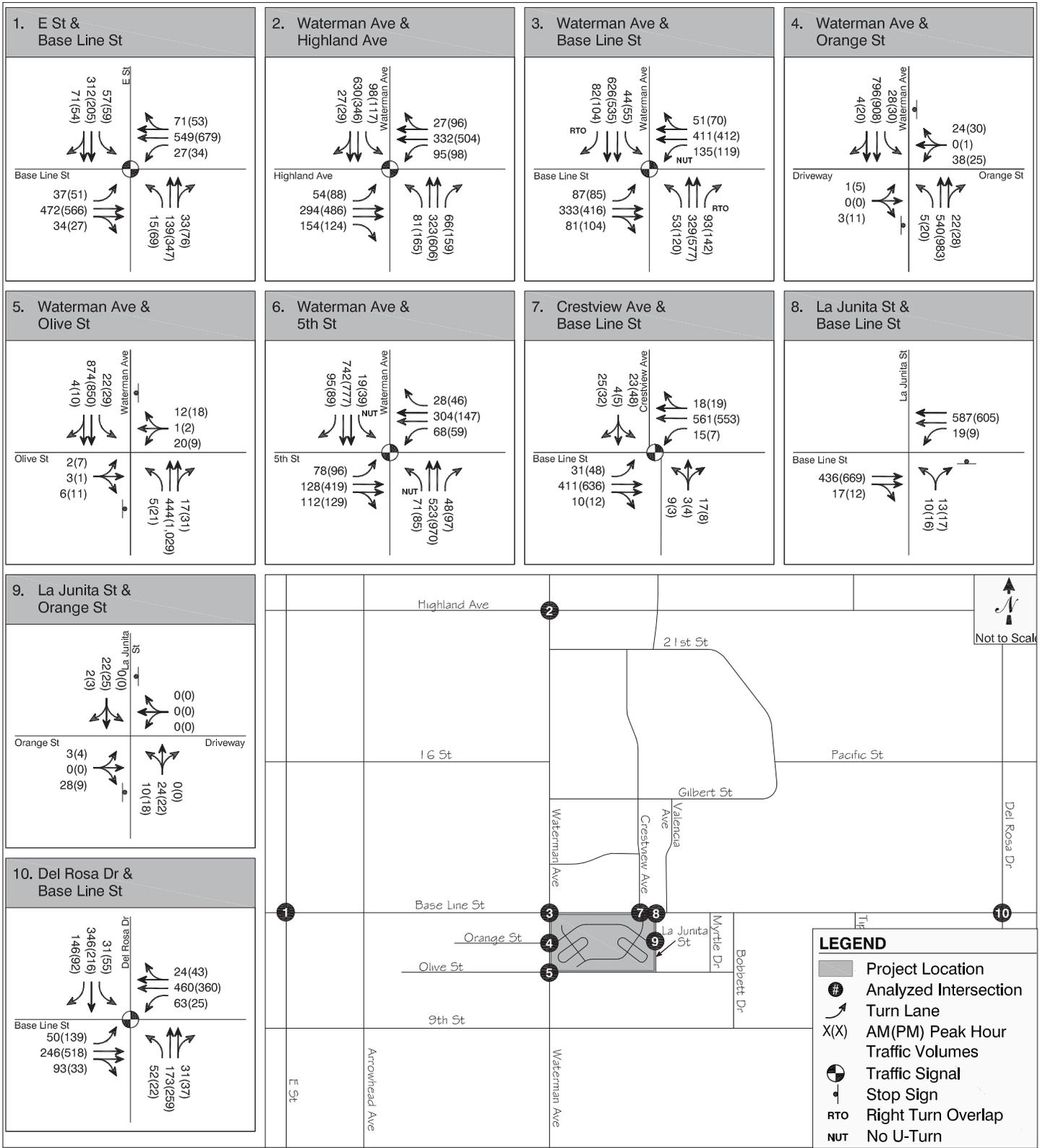
As shown in Table 14 above, all of the signalized intersections currently operate at LOS C or better during the peak hours. For unsignalized intersections, the following two intersections operate at LOS D or worse during the peak hours:

- ◆ Waterman Avenue/Orange Street – LOS D during the AM peak hour and LOS F during the PM peak hour
- ◆ Waterman Avenue/Olive Street – LOS D during the AM peak hour and LOS E during the PM peak hour

This determination of deficient conditions occurs because of delays occurring on the side streets connecting to Waterman Avenue, in that vehicles turning onto Waterman Avenue may have to wait for gaps in incoming traffic.

Discussion

To identify significant project impacts, Fehr & Peers evaluated the following scenarios as part of the proposed project consistent with the City of San Bernardino Traffic Impact Analysis Guidelines and the requirements set forth in the San Bernardino County Congestion Management Program (CMP):



Source: Fehr & Peers, 2012.

FIGURE 21
EXISTING LANE CONFIGURATIONS AND PEAK HOUR TRAFFIC VOLUMES

- ◆ *Existing Conditions* – Consists of existing (May 2011) counts collected at the study intersection locations. Existing counts were conducted on May 4, 2011 from 7:00 to 9:00 AM for the morning peak hour and from 4:00 to 6:00 PM for the evening peak hour.
- ◆ *Project Opening Year (2013) Base Conditions* – Consists of the Existing Conditions traffic volumes plus an annual growth factor of three percent per year over the two-year period between the existing counts and the project opening year.
- ◆ *Project Opening Year (2013) plus Project Conditions* – Consists of Project Opening Year (2013) Base Conditions plus traffic generated from the proposed project.
- ◆ *Future Build-Out Year (2033) Base Conditions* – Consists of Existing Conditions traffic volumes plus a three percent per year growth factor plus traffic generated from approved and pending projects in the proposed project’s vicinity.
- ◆ *Future Build-Out Year (2033) plus Project Conditions* – Consists of Future Build-Out Year (2033) Base Conditions plus traffic generated from the proposed project.

The 2033 scenario analyzes the cumulative conditions impacts from nearby projects expected to influence the study area. Cumulative projects are defined as all projects that were pending, approved, or under construction in the City of San Bernardino as of May 2011. The pending and approved projects analyzed in the 2033 scenario are shown on Figure 22.

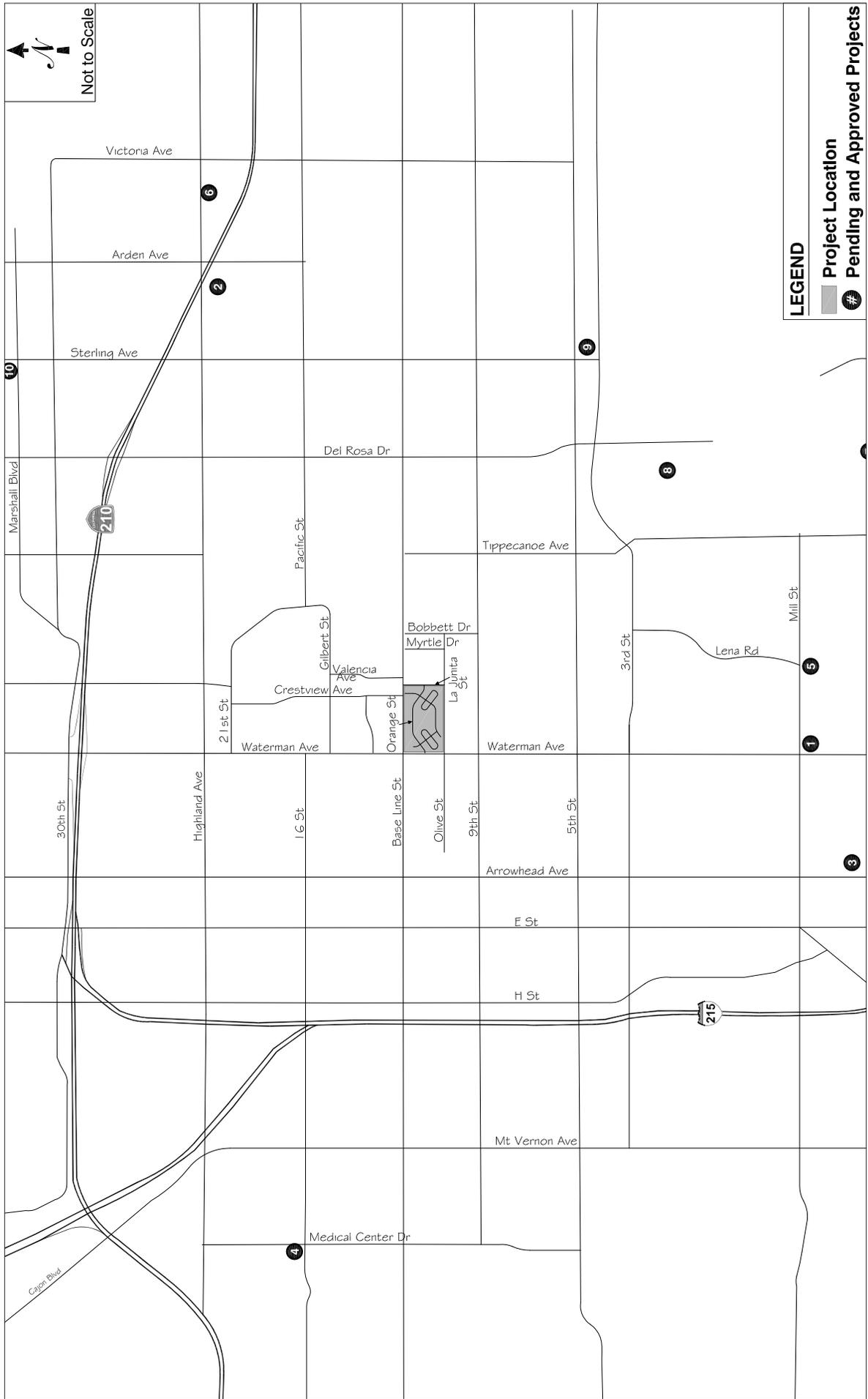
The scenarios described above were evaluated during the weekday morning and evening peak hours.

a) Would the project exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

The project is proposing both on-site and off-site improvements to roadways. The on-site improvements include the reconstruction of new roadways within the project site, as shown on Figure 3. Concurrent with these on-site improvements, a series of off-site improvements will be constructed along several roadways adjacent to the project site including Baseline Street, Waterman Avenue, Olive Street, and La Junita Street. These proposed improvements include:

- ◆ Narrowed travel lanes, to slow down traffic and decrease the permeable surface area.
- ◆ On-street parallel and diagonal parking, to decrease the needed travel surface area to parking spaces and decrease traffic speeds.
- ◆ Raised crosswalks and curb bulb outs, to increase pedestrian safety.
- ◆ Increased sidewalk width, to promote walking and the accessibility of pedestrian routes.
- ◆ Addition of street trees.
- ◆ Under-grounding of existing electrical lines.

With these proposed improvements, the number of existing travel lanes on Baseline Street and Waterman Avenue would be maintained to preserve roadway and intersection capacity.



Source: Fehr & Peers, 2011.

FIGURE 22

PENDING AND APPROVED PROJECTS

The Opening Year (2013) scenario analyzes the intersection conditions with the addition of ambient growth per year from the existing volumes to 2013 (the opening year for the proposed project). A 3 percent ambient growth per year, over the two year period between the existing and opening year scenario (equal to 6.09%) was applied to the existing conditions volumes per City of San Bernardino Traffic Impact Study Guidelines. There are no roadway improvements planned and funded at the study intersections that will be completed by 2013. Intersection level of service analysis results for opening year (2013) are summarized in Table 15. As shown in this table, with the application of ambient growth, most of the study intersections will continue to operate at LOS C or better, with the exception of the following two intersections:

- ◆ Waterman Avenue/Orange Street – LOS E during the AM peak hour and LOS F during the PM peak hour
- ◆ Waterman Avenue/Olive Street – LOS E during the AM peak hour and LOS F during the PM peak hour

The opening year (2013) conditions, described above, plus the project conditions were used to evaluate the net change in traffic conditions and to identify potential traffic impacts associated with the proposed project. Fehr & Peers estimated the project trip generation by applying standard trip generation rates, based on ITE's Trip Generation, 8th Edition, 2008. Table 16 summarizes the trip generation estimates for the proposed project.

At the study intersections, the proposed project includes the following intersection improvements shown on the project site plan:

- ◆ Waterman Avenue/Baseline Street – Signal modification.
- ◆ Proposed Alder Street/Baseline Street – Install traffic signal.
- ◆ Crestview Avenue/Baseline Street – Intersection realignment to connect Crestview Avenue and signal modification.
- ◆ Waterman Avenue/Orange Street – Intersection realignment to connect Orange Street and side-street stop controlled.
- ◆ Waterman Avenue/Olive Street – Install traffic signal.
- ◆ La Junita Street/Orange Street – All-way stop controlled.

The project-related trips, listed in Table 16, were added to the Opening Year No Project volumes to develop Opening Year with Project volumes, shown in Figure 23. Intersection level of service results for Opening Year (2013) plus Project are summarized in Table 17. Table 18 compares the change in volume-to-capacity ratios at intersections that operate at LOS C, D, E, or F to determine project impacts. As shown in Table 17, the project does not significantly impact the street network for the opening year scenario. No mitigation measures are required.

2033 traffic volumes were developed by applying a 3 percent annual growth rate to existing traffic counts. The list of pending and approved projects, shown in Figure 22, was also used to determine the amount of traffic generated from related projects which were added to the traffic volumes. The level of service results are summarized in Table 19 for the Future Buildout Year (2033) No Project Condition.

TABLE 15 INTERSECTION LEVELS OF SERVICE: OPENING YEAR (2013) NO PROJECT

Intersection	Control	AM Peak Hour			PM Peak Hour		
		Delay ^a	LOS	V/C ^c	Delay ^a	LOS	V/C ^c
1. E Street/Baseline Street	Signalized	14.5	B	0.41	15.5	B	0.43
2. Waterman Avenue/Highland Avenue ^b	Signalized	27.1	C	0.48	28.9	C	0.59
3. Waterman Avenue/Baseline Street ^b	Signalized	23.3	C	0.57	25.0	C	0.58
4. Waterman Avenue/Orange Street	SSSC ^d	41.0	E	n/a	224.8	F	n/s
5. Waterman Avenue/Olive Street	SSSC ^d	35.0	E	n/a	65.4	F	n/a
6. Waterman Avenue/5 th Street ^b	Signalized	18.1	B	0.57	21.5	C	0.69
7. Crestview Avenue/Baseline Street	Signalized	3.4	A	0.29	3.4	A	0.28
8. La Junita Street/Baseline Street	SSSC ^d	16.2	C	n/a	19.5	C	n/a
9. La Junita Street/Orange Street	SSSC ^d	8.7	A	n/a	8.8	A	n/a
10. Del Rosa Drive/Baseline Street	Signalized	25.8	C	0.54	23.5	C	0.47

^a Delay for intersections based on application of 2000 Highway Capacity Manual Methodology. Delay was calculated using Synchro 6.0 software.

^b CMP intersection

^c V/C = Volume to Capacity ratio. Note - V/C is not calculated for unsignalized intersections.

^d SSSC= Side Street Stop Sign Controlled

Source: Fehr & Peers, 2011.

TABLE 16 PROJECT TRIP GENERATION

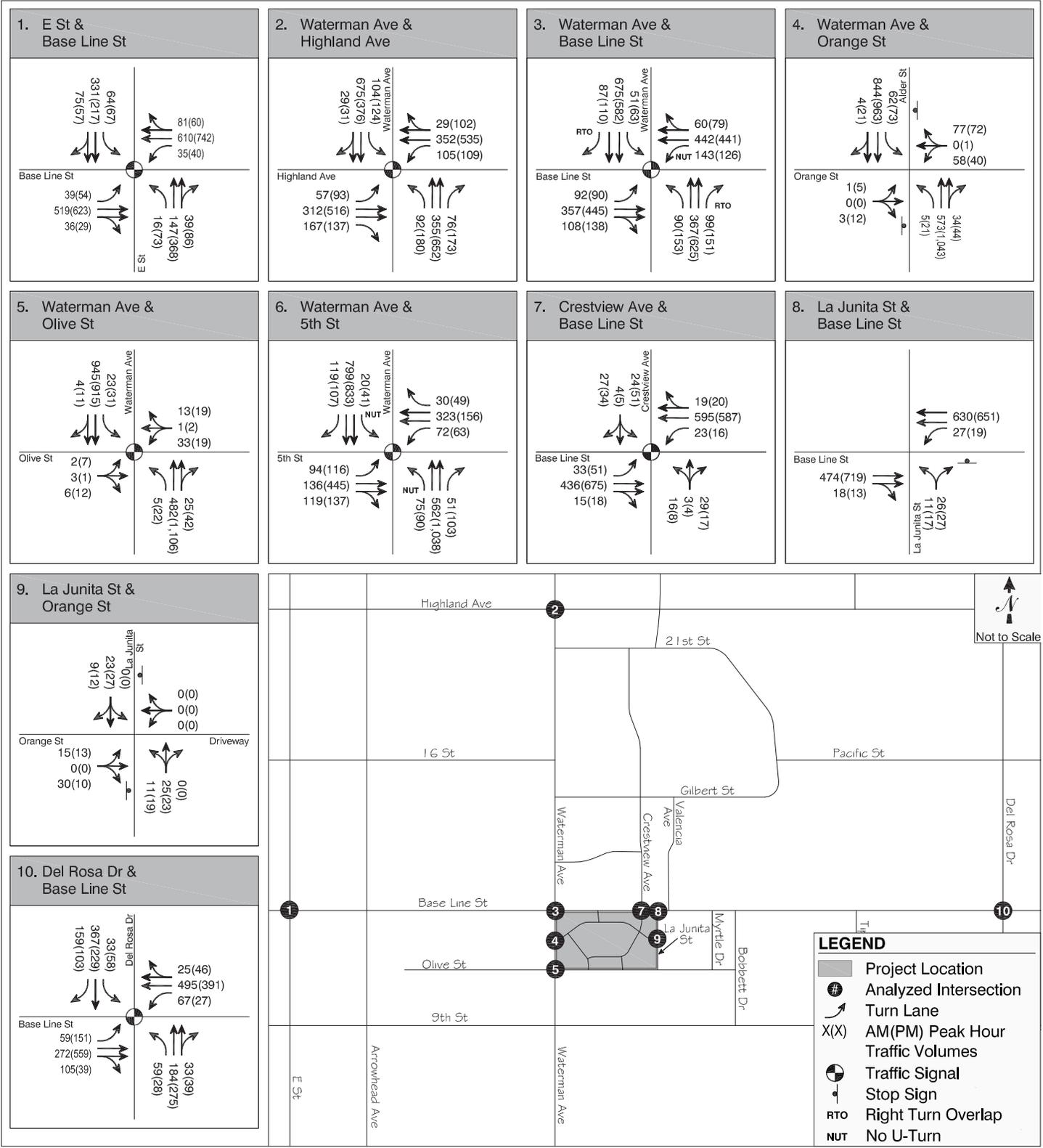
Land Use	Size	Unit	Daily	Trip Generation ^a					
				AM Peak Hour			PM Peak Hour		
				Inbound	Outbound	Total	Inbound	Outbound	Total
New Multi-Family Dwelling Units	411	Du	2,733	421	168	210	166	90	256
<i>Existing 252 Multi-Family DUs^b</i>			-2,598	-26	-88	-114	-105	-55	-160
Total			135	16	80	96	61	35	96
Community Center	114	ksf	2,609	113	73	186	62	105	167
<i>Internalized Trips from Residents^c</i>			-1,305	-57	-36	-93	-31	-52	-84
Total			1,305	57	37	93	31	53	84
Trip Generation Total:			5,342	155	241	396	228	195	423
Internalized Trips Total:			-1,305	-57	-36	-93	-31	-52	-84
Total Net New Trip Generation			1,440	72	117	189	92	88	180

^a Trip generations and pass-by rates calculated from ITE Trip Generation (8th edition, 2008) and Trip Generation Handbook (2nd edition, 2004) Categories 220 and 495.

^b Credits calculated from existing counts conducted on April 28, 2011 at inlet/outlet locations to project site. Proportion of existing land use units over proposed land use units (252/411=61.3%) is credited for counts exceeding ITE trip generation values.

^c Community Center is assumed to be primarily used by residents of the project.

Source: Fehr & Peers, 2011.



Source: Fehr & Peers, 2012.

FIGURE 23

OPENING YEAR (2013) PLUS PROJECT CONDITION VOLUMES AND LANE CONFIGURATIONS AND PEAK HOUR TRAFFIC VOLUMES

TABLE 17 INTERSECTION LEVELS OF SERVICE: OPENING YEAR (2013) PLUS PROJECT

Intersection	Control	AM Peak Hour			PM Peak Hour		
		Delay ^a	LOS	V/C ^c	Delay ^a	LOS	V/C ^c
1. E Street/Baseline Street	Signalized	14.4	B	0.41	15.6	B	0.45
2. Waterman Avenue/Highland Avenue ^b	Signalized	27.2	C	0.49	29.3	C	0.61
3. Waterman Avenue/Baseline Street ^b	Signalized	29.9	C	0.60	31.1	C	0.63
4. Waterman Avenue/Orange Street	SSSC ^d	95.8	F	n/a	110.0	F	n/a
5. Waterman Avenue/Olive Street	Signalized	6.8	A	0.42	6.8	A	0.43
6. Waterman Avenue/5 th Street ^b	Signalized	18.4	B	0.58	21.6	C	0.69
7. Crestview Avenue/Baseline Street	Signalized	4.9	A	0.28	4.5	A	0.28
8. La Junita Street/Baseline Street	SSSC ^d	15.1	C	n/a	18.8	C	n/a
9. La Junita Street/Orange Street	SSSC ^d	9.0	A	n/a	9.1	A	n/a
10. Del Rosa Drive/Baseline Street	Signalized	26.1	C	0.57	23.7	C	0.48

^a Delay for intersections based on application of 2000 Highway Capacity Manual Methodology. Delay was calculated using Synchro 6.0 software.

^b CMP intersection

^c V/C = Volume to Capacity ratio. Note - V/C is not calculated for unsignalized intersections.

^d SSSC= Side street stop controlled

Source: Fehr & Peers, 2012.

TABLE 18 IMPACTS FOR SIGNALIZED INTERSECTIONS: OPENING YEAR (2013) PLUS PROJECT

Intersection	LOS AM (PM)	Allowable Δ V/C ^a AM (PM)	AM Peak Hour		PM Peak Hour			
			No Project	With Project	Δ V/C	No Project	With Project	Δ V/C
1. E Street/Baseline Street	B (B)							
2. Waterman Avenue/Highland Ave.	C (C)	0.04 (0.04)	0.48	0.49	0.01	0.59	0.61	0.02
3. Waterman Avenue/Baseline Street	C (C)	0.04 (0.04)	0.56	0.60	0.04	0.60	0.63	0.03
4. Waterman Avenue/Orange Street	F (F)							
5. Waterman Avenue/Olive Street	A (A)							
6. Waterman Avenue/5 th Street	B (C)	n/a (0.04)				0.69	0.69	0.00
7. Crestview Avenue/Baseline Street	A (A)							
8. La Junita Street/Baseline Street	C (C)							
9. La Junita Street/Orange Street	A (A)							
10. Del Rosa Drive/Baseline Street	C (C)	0.04 (0.04)	0.54	0.57	0.03	0.47	0.48	0.01

^a V/C = Volume to Capacity ratio. Calculated using the Synchro 6 software package.

Shaded cells indicate where intersections operate at LOS A or B.

Bold-Italicized type indicates project impact.

Source: Fehr & Peers, 2011.

TABLE 19 INTERSECTION LEVELS OF SERVICE: OPENING YEAR (2013) PLUS PROJECT

Intersection	Control	AM Peak Hour			PM Peak Hour		
		Delay ^a	LOS	V/C ^c	Delay ^a	LOS	V/C ^c
1. E Street/Baseline Street	Signalized	14.4	B	0.41	15.6	B	0.45
2. Waterman Avenue/Highland Avenue ^b	Signalized	27.2	C	0.49	29.3	C	0.61
3. Waterman Avenue/Baseline Street ^b	Signalized	29.9	C	0.60	31.1	C	0.63
4. Waterman Avenue/Orange Street	SSSC ^d	95.8	F	n/a	110.0	F	n/a
5. Waterman Avenue/Olive Street	Signalized	6.8	A	0.42	6.8	A	0.43
6. Waterman Avenue/5 th Street ^b	Signalized	18.4	B	0.58	21.6	C	0.69
7. Crestview Avenue/Baseline Street	Signalized	4.9	A	0.28	4.5	A	0.28
8. La Junita Street/Baseline Street	SSSC ^d	15.1	C	n/a	18.8	C	n/a
9. La Junita Street/Orange Street	SSSC ^d	9.0	A	n/a	9.1	A	n/a
10. Del Rosa Drive/Baseline Street	Signalized	26.1	C	0.57	23.7	C	0.48

^a Delay for intersections based on application of 2000 Highway Capacity Manual Methodology. Delay was calculated using Synchro 6 software.

^b CMP intersection

^c V/C = Volume to Capacity ratio. Note - V/C is not calculated for unsignalized intersections.

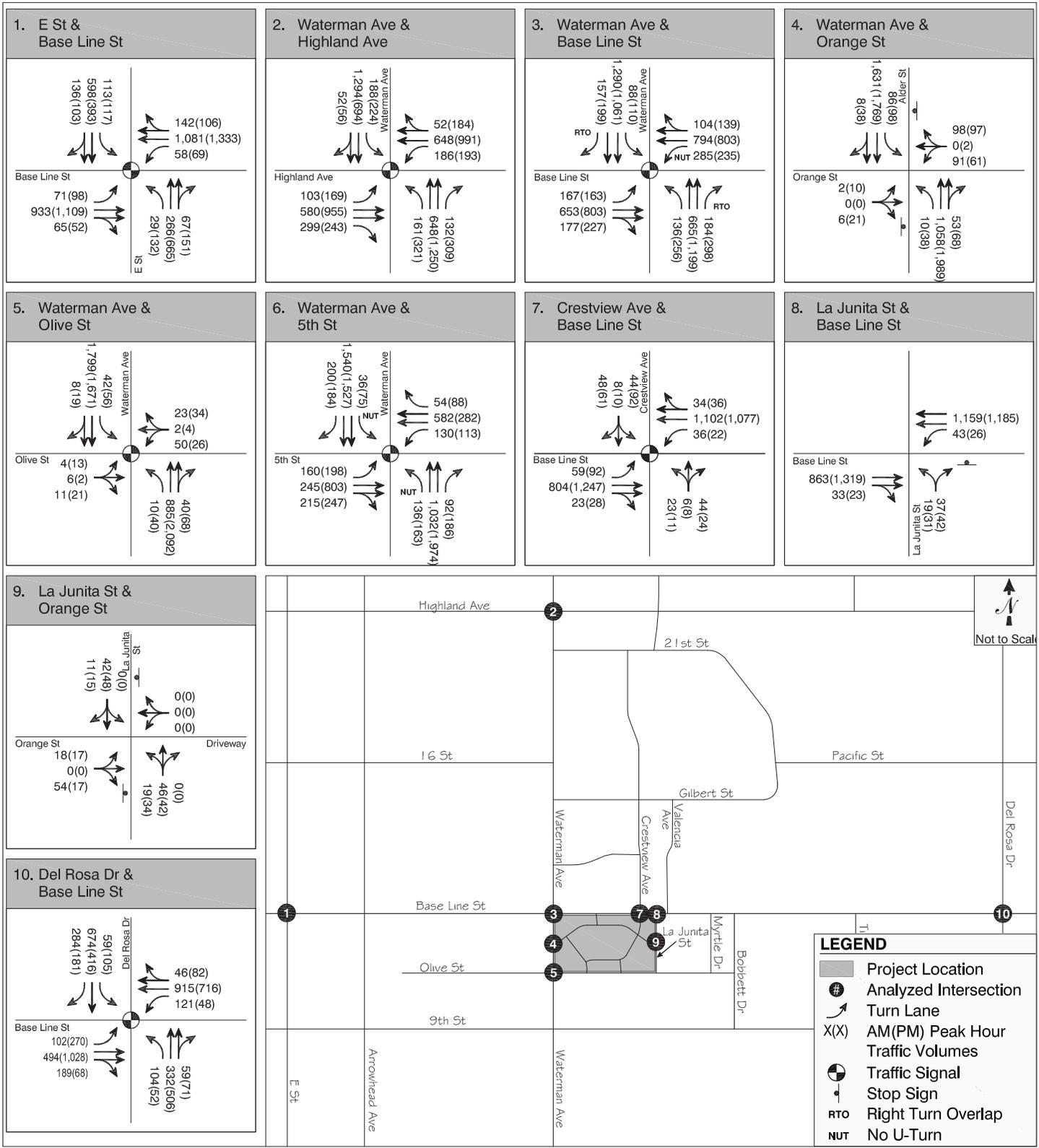
^d SSSC = Side Street Stop Sign Controlled

Source: Fehr & Peers, 2012.

In order to determine traffic impacts on the existing circulation system associated with buildout of the project, the traffic volumes generated by the proposed project were added to the Future Year Buildout (2033) No Project peak hour traffic volumes for the study intersections. This resulted in the Future Year Buildout (2033) Plus Project peak hour volumes shown on Figure 24 and listed in Tables 20 and 21 below.

As shown in Table 20, the traffic analysis found that with the addition of the proposed project several intersections would have deficient operations in either the AM or PM Peak Hour but would not exceed City of San Bernardino thresholds as described below:

- ◆ **Waterman Avenue/Highland Avenue - AM and PM Peak Hour:** The intersection would operate at LOS E in the AM peak hour with a Volume to Capacity (V/C) ratio difference of 0.00 and LOS F in the PM peak hour with a V/C ratio difference of 0.01 from the “without project” scenario. The V/C ratio, not delay, is the controlling factor of significant impacts in the City of San Bernardino. The V/C ratio difference for this intersection falls within the allowable difference in V/C ratios. Therefore, mitigation measures are not required for this location.
- ◆ **Waterman Avenue/5th Street -AM and PM Peak Hour:** The intersection would operate at LOS D in the AM peak hour with a V/C ratio difference of 0.00 and LOS F in the PM peak hour with a V/C ratio difference of -0.07 from the “without project” scenario. The V/C ratio, not delay, is the controlling factor of significant impacts in the City of San Bernardino. The V/C ratio difference for this intersection falls within the allowable difference in V/C ratios. Therefore, this location does not need to be mitigated and no mitigation is required for this scenario.



Source: Fehr & Peers, 2012.

FIGURE 24

FUTURE BUILDOUT YEAR (2033) PLUS PROJECT LANE CONFIGURATIONS AND PEAK HOUR TRAFFIC VOLUMES

TABLE 20 INTERSECTION LEVELS OF SERVICE: FUTURE BUILDOUT YEAR (2033) PLUS PROJECT

Intersection	Control	AM Peak Hour			PM Peak Hour		
		Delay ^a	LOS	V/C ^c	Delay ^a	LOS	V/C ^c
1. E Street/Baseline Street	Signalized	18.1	B	0.67	28.8	C	1.03
2. Waterman Ave/Highland Ave ^b	Signalized	56.7	E	0.84	93.4	F	1.15
3. Waterman Ave/Baseline Street ^b	Signalized	55.2	E	0.96	55.6	E	1.00
4. Waterman Ave/Orange Street	SSSC ^d	132.1	F	n/a	ERR	F	n/a
5. Waterman Ave/Olive Street	Signalized	9.5	A	0.65	16.1	B	0.76
6. Waterman Ave/5 th Street ^b	Signalized	43.6	D	0.85	104.5	F	1.09
7. Crestview Ave/Baseline Street	Signalized	5.1	A	0.41	6.3	A	0.50
8. La Junita Street/Baseline Street	SSSC ^d	31.2	D	n/a	207.5	F	n/a
9. La Junita Street/Orange Street	SSSC ^d	9.1	A	n/a	9.3	A	n/a
10. Del Rosa Drive/Baseline Street	Signalized	39.7	D	0.85	31.3	C	0.74
11.							

^a Delay for intersections based on application of 2000 Highway Capacity Manual Methodology. Delay was calculated using Synchro 6.0 software.

^b CMP intersection

^c V/C = Volume to Capacity ratio. Note - V/C is not calculated for unsignalized intersections.

^d SSSC= Side street stop controlled

Source: Fehr & Peers, 2012.

TABLE 21 IMPACTS FOR SIGNALIZED INTERSECTIONS: FUTURE BUILDOUT YEAR (2033) PLUS PROJECT

Intersection	LOS AM (PM)	AM Peak Hour			PM Peak Hour			ΔV/C
		Allowable ΔV/C ^a	No Project	With Project	No Project	With Project		
1. E Street/Baseline Street	B(C)	n/a(0.04)				1.01	1.03	0.02
2. Waterman Ave/Highland Ave ^b	D(F)	0.02 (0.01)	0.84	0.84	0.00	1.14	1.15	0.01
3. Waterman Ave/Baseline St ^b	D(D)	0.02 (0.02)	0.91	0.96	0.05	0.97	1.00	0.03
4. Waterman Ave/Orange St	F(F)							
5. Waterman Ave/Olive St	A(B)							
6. Waterman Ave/5th St ^b	C(F)	0.04(0.01)	0.85	0.85	0.00	1.16	1.09	-0.07
7. Crestview Ave/Baseline St	A(A)							
8. La Junita St/Baseline St	D(F)							
9. La Junita St/Orange St	A(A)							
10. Del Rosa Dr/Baseline St	D(C)	0.02(0.04)	0.84	0.85	0.01	0.73	0.74	0.01

^a V/C = Volume to Capacity ratio. Calculated using the Synchro 6 software package.

^b CMP intersection.

Shaded cells indicate where intersections operate at LOS A or B. ***Bold-Italicized*** type indicates project impact.

Source: Fehr & Peers, 2012.

- ◆ **La Junita/Baseline Street – AM and PM Peak Hour:** The intersection operates at LOS D in the AM peak hour and LOS F in the PM peak hour. Although the “with project” scenario surpasses the LOS C minimum requirement for unsignalized intersections, it does not satisfy the peak hour signal warrant requirements to install a traffic signal. Therefore, mitigation measures are not required for this location since the City requires that an unsignalized intersection exceed both the LOS threshold and meet with peak hour signal warrant.
- ◆ **Del Rosa/La Junita Street– AM Peak Hour:** The intersection operates at LOS D in the AM peak hour with a V/C ratio difference of 0.01 from the “without project” scenario. The V/C ratio, not the delay is the controlling factor of significant impacts in the City of San Bernardino. The V/C ratio difference for this intersection falls within the allowable difference in V/C ratios. Therefore, this location does not need to be mitigated and no mitigation is required for this scenario.

As shown in Table 21, the traffic impact analysis also found that full buildout of the project would impact the following two intersections:

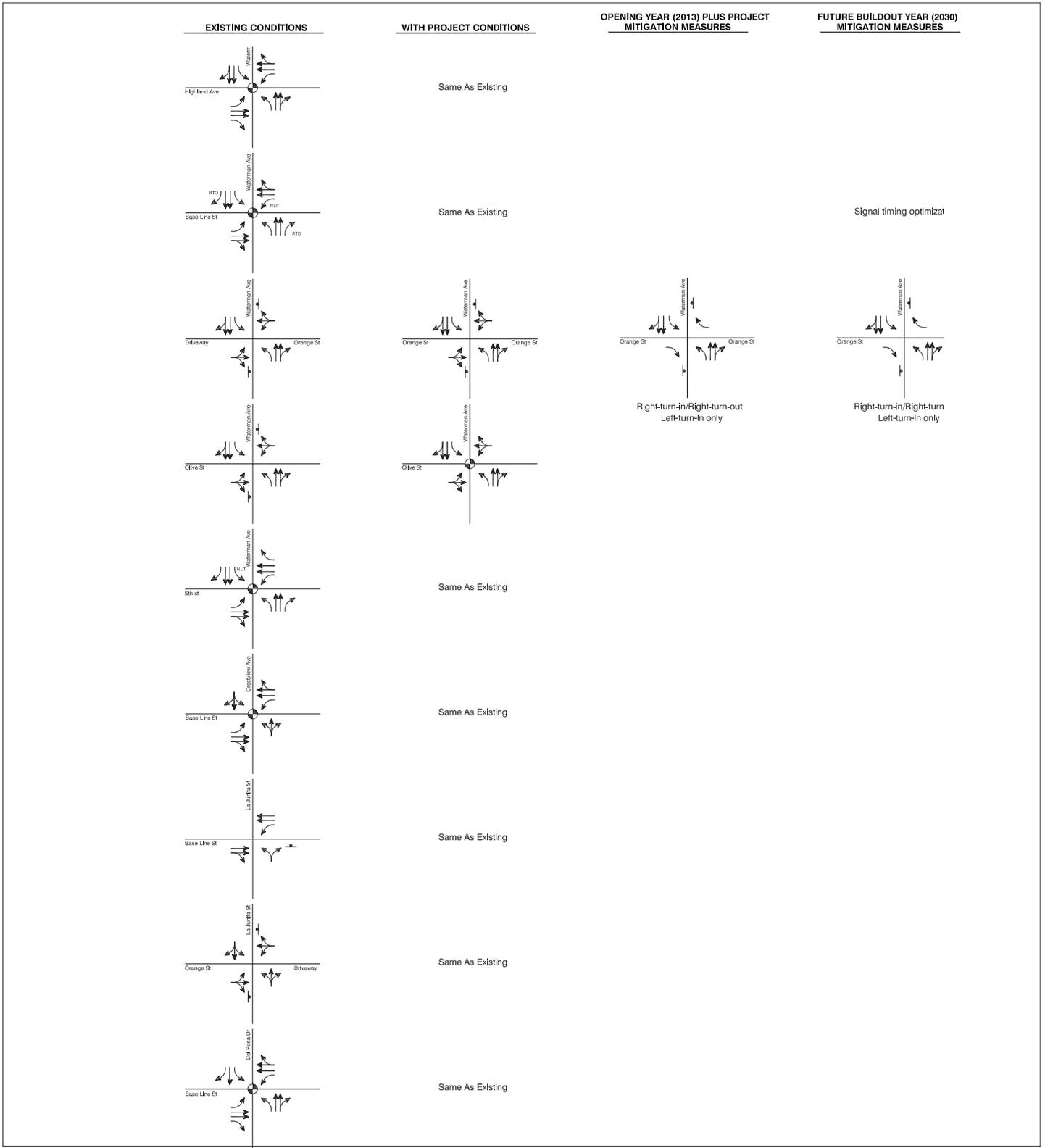
Impact TRAF-1: Waterman Avenue/Baseline Street – AM and PM Peak Hour: The intersection would operate at LOS E during the AM and PM peak hour with the addition of project-generated traffic. The V/C ratio would increase by 0.05 in the AM peak hour and 0.03 in the PM peak hour. This would be a significant impact.

Proposed bicycle routes in the study area are planned on Waterman Avenue. Fifty-foot pedestrian-only greenways with natural bioswales and walking paths are planned throughout the project. The proposed project has a very high level of pedestrian connectivity within the site with an extensive network of pedestrian-only trails and sidewalks connecting all areas of the project. This internal pedestrian network is complemented through additional pedestrian facilities on the boundary of the project including sidewalks on Olive Street, Waterman Avenue, and Baseline Street. It is therefore concluded that the project would have a positive impact on pedestrian connectivity. The proposed project would not impact the existing transit operations in the study area.

The intersection impacts identified above would be reduced to a less-than-significant level by the following mitigation measures, shown in Figure 25. Therefore, impacts on the existing circulation system would be less than significant with mitigation. (*Less than significant with mitigation*)

Impact TRAF-2: Waterman Avenue/Orange Street – AM and PM Peak Hour: Deficient condition for this intersection occur because of delays occurring on the side streets (Orange Street) connecting to Waterman Avenue, in that vehicles turning onto Waterman Avenue may have to wait for gaps in incoming traffic. This would be a significant impact.

Mitigation Measure TRAF-1: For the intersection to operate at an acceptable level, signal modification and optimization would be needed. The measure would help alleviate congestion at this movement. With the improvement, the intersection would operate at LOS D with a V/C ratio increase of 0.02 in the AM peak hour and at LOS D with a V/C ratio increase of 0.00 in the PM peak hour from “without project” conditions.



Source: Fehr & Peers, 2012.

FIGURE 25
 TRAFFIC MITIGATION MEASURES

The project is responsible for a fair share contribution of each mitigation measure. Project fair share contributions are calculated by comparing the project's peak hour traffic generated against future growth. It is recommended that the intersection implement signal optimization to bring LOS delay to within allowable limits.

Mitigation Measure TRAF-2: It is recommended that the project implement a right-turn-in/right-turn-out, left-turn-in rule at this intersection. This measure will substantially alleviate delay experienced by drivers wanting to turn left out of the Orange Street driveway. Although this intersection is warranted for a signal, it is not recommended given the intersection's close proximity (~350 feet) to the Waterman Avenue and Baseline Street intersection.

b) Would the project conflict with an applicable congestion management program, including, but not limited to a level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

The significance criteria used in the traffic impact analysis are based on the City of San Bernardino's General Plan, the City's Traffic Impact Analysis Guidelines, and the County's Congestion Management Program (CMP). Since the analysis of the project is consistent with the standards found in the County's CMP, the project would not conflict with an applicable CMP. Therefore, no impacts are anticipated. *(No impact)*

c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

The proposed project would not impact air traffic patterns through an increase in traffic levels or a change in location that results in substantial safety risks. Therefore, no impacts are anticipated. *(No impact)*

d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

As described in response a) above, there are on-site and off-site roadways proposed for the project. The on-site roadways are proposed to be private streets and therefore City of San Bernardino Street Design Standards do not apply. In the absence of City Standards, generalized standards related to lane width, curb radii, and other related items, were considered. These proposed internal roadways are consistent with general standards for roadways and are sufficient for internal circulation. Therefore, the proposed project would not substantially increase hazards due to design features or incompatible uses and no impacts are anticipated. *(No impact)*

e) Would the project result in inadequate emergency access?

This analysis considers whether emergency vehicles can access the site from a regional perspective and whether emergency vehicles can travel into the site. A review of the project location indicates that it is located at the corner of two major roadways and is several miles from several regional freeways (I-10, I-215). The regional access is therefore considered to be more than adequate. As noted above, the project has a high level of internal accessibility; therefore, it is considered that emergency vehicles can easily travel while inside the project boundary using the internal ring road previously discussed.

Therefore, the proposed project would not result in inadequate emergency access and there would be no impact. *(No impact)*

f) Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

The City of San Bernardino General Plan contains several policies supporting alternative transportation. These include the following:

Policy 6.6.1: Support the efforts of regional, state, and federal agencies to provide additional local and express bus service in the City.

Policy 6.6.2: In cooperation with Omnitrans, require new development to provide transit facilities, such as bus shelters and turnouts, as necessary and warranted by the scale of the development.

Policy 6.6.3: Encourage measures that will reduce the number of vehicle-miles traveled during peak periods, including the following examples of these types of measures:

- ◆ Incentives for car-pooling and vanpools
- ◆ Preferential parking for car-pools and vanpools
- ◆ An adequate, safe, and interconnected system of pedestrian and bicycle paths

Policy 8.3: Develop a well-designed system of interconnected multi-purpose trails, bikeways, and pedestrian paths.

Policy 8.3.8: Install sidewalks and wheelchair ramps in existing neighborhoods.

The project is consistent with these policies through existing bus stops located along Waterman Avenue and Baseline Street, and through planned sidewalks and crosswalks throughout and around the project. The project also proposes to increase sidewalk widths and raise curb bulb-outs and crosswalks, promoting pedestrian safety and the accessibility of pedestrian routes. Narrow travel lanes throughout the site will also decrease travel speeds to provide pedestrian and bicycle safety.

For the reasons described above, the proposed project is consistent with the adopted policies supporting alternative transportation. Therefore, no impacts are anticipated. *(No impact)*

Transportation and Traffic Mitigation Measures:

TRAF-1: For the intersection to operate at an acceptable level, signal modification and optimization would be needed. The measure would help alleviate congestion at this movement. With the improvement, the intersection would operate at LOS D with a V/C ratio increase of 0.02 in the AM peak hour and at LOS D with a V/C ratio increase of 0.00 in the PM peak hour from “without project” conditions.

The project is responsible for a fair share contribution of each mitigation measure. Project fair share contributions are calculated by comparing the project’s peak hour traffic generated against future growth. It is recommended that the intersection implement signal optimization to bring LOS delay to within allowable limits.

TRAF-2: It is recommended that the project implement a right-turn-in/right-turn-out, left-turn-in rule at this intersection. This measure will substantially alleviate delay experienced by drivers wanting to turn left out of the Orange Street driveway. Although this intersection is warranted for a signal, it is not recommended given the intersection's close proximity (~ 350 feet) to the Waterman Avenue and Baseline Street intersection.

XVI. UTILITIES AND SERVICE SYSTEMS

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Exceed wastewater treatment requirements of the Santa Ana Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

The City of San Bernardino provides wastewater, water, stormwater, and solid waste services throughout the city. The existing services and facilities serving the project site are described below. The discussion of wastewater, water, and stormwater is based on the Wastewater and Flow Analysis Report prepared by Hyphae Design Laboratory (Appendix K) and the Water Quality Management Plan prepared by Dan Guerra & Associates (Appendix J).

The project site is served by the City of San Bernardino sewer system, the San Bernardino Water Reclamation Plant (SBWRP) and the Rapid Infiltration Extraction Tertiary Treatment Facility (RIX). SBWRP is a regional plant serving the City of San Bernardino and outlying cities within the San Bernardino Valley Municipal Water District boundaries. RIX is under contract with City of San Bernardino for tertiary wastewater treatment. Reclaimed water from RIX is discharged to the Santa Ana River after treatment. The City has a permit from the Santa Ana Regional Water Quality Control Board (RWQCB) for all wastewater generated within its boundaries.⁶⁷

⁶⁷ City of San Bernardino Website, *San Bernardino Water Reclamation Facility*, http://www.ci.san-bernardino.ca.us/water/divisions/water_reclamation/default.asp, accessed on May 3, 2011.

The existing project site is serviced by 10” and 12” diameter public sewer facilities located in Waterman Avenue. The City of San Bernardino Wastewater Collection System Master Plan Report, prepared in 2002, does not indicate any sewer deficiencies in the downstream systems. The existing on-site private sewer facilities are anticipated to be removed with redevelopment of the project site.

As described in the General Plan EIR, the existing flow to the SBWRP of 28 MGD could be expected to increase cumulatively by 20.2 MGD for a total General Plan buildout flow of 48.2 MGD. This amount would exceed the existing design capacity of 33 MGD by 15.2 MGD. Additional facilities would need to be built or expansion of existing facilities would need to be completed to accommodate the proposed buildout in the service area of the SBWRP. Mitigation presented in the City’s General Plan EIR requires the City to update the Wastewater Collection System Master Plan to reflect General Plan Update buildout statistics, review treatment facility capacity periodically and adjust Sewer Capacity Fees when appropriate in consultation with participating communities to accommodate construction of new or expanded wastewater treatment and collection facilities.⁶⁸

Storm drains and flood control facilities within the City include natural and man-made channels, storm drains, street waterways, natural drainage courses, dams, basins, and levees. Storm drain and flood control facilities are administered by the City of San Bernardino, San Bernardino County Flood Control District. The existing project site is currently serviced by minimal public storm drain facilities. An existing 18’ diameter underground drainage system crossing Olive Street west of La Junita Street intercepts and conveys the southeast portion of the site, along with flows from an existing system crossing Baseline Street at La Junita Street. The remaining majority of the site drains via surface flow to Waterman Avenue. Major surface flows also are currently contained in Waterman Avenue from areas north of Baseline Street adjacent to the project site.

The San Bernardino Municipal Water Department (SBMWD) provides domestic water service in the City. SBMWD produces water from the Bunker Hill Groundwater Basin and delivers more than 47,676 acre-feet per year (15.5 billion gallons) of water to its service area for both commercial and residential use. SBMWD operates production and distribution facilities that include 60 wells located throughout 45 square miles of water service area, more than 100 million gallons of water storage in 31 covered storage reservoirs, and more than 560 miles of water mains.⁶⁹

The existing project site is serviced by public water facilities including 16” diameter in Baseline Street and 12” diameter in Waterman Avenue, and 8” diameter in a portion of Olive Street. Existing onsite private water facilities are advanced in age and are anticipated to be removed with redevelopment of the project site.

SBMWD prepares an Urban Water Management Plan every five years to document existing water demand and supplies, to plan for future needs, and to identify new sources of water. The 2005 Urban Water Management Plan (UWMP) is used to develop long-range Capital Improvement Plans for the

⁶⁸ City of San Bernardino, 2005, *General Plan and Associated Specific Plans EIR*, pages 5.12-12 and 13.

⁶⁹ City of San Bernardino Website, *Water Utility*, http://www.ci.san-bernardino.ca.us/water/divisions/water_utility/default.asp, access on May 3, 2011.

City's Municipal water delivery system.⁷⁰ The UWMP utilizes the City's General Plan as the basis for projecting future need based on build-out of the land uses in the adopted General Plan.

The San Bernardino Valley Municipal Water District (SBVMWD) was formed in 1954 to plan long-range water supply for the San Bernardino Valley. It imports water into its service area through participation in the California State Water Project and manages groundwater storage within its boundaries. SBVMWD covers about 325 square miles and includes the cities and communities of San Bernardino, and other cities within the region.⁷¹

The project site is served by the City of San Bernardino Refuse and Recycling Division, which provides solid waste collection services to residential and commercial customers for refuse, recyclables, and greenwaste. Materials that are not recycled in compliance with the Integrated Waste Management Act (AB 939) are taken to one of two regional landfills in the valley (San Timoteo: permitted until 2026 or Mid-Valley: permitted until 2033).⁷² The San Timoteo and Mid-Valley sanitary landfills are permitted to receive 365,000 tons per year and 2.7 million tons per year, respectively.⁷³

Discussion

a) Would the project exceed wastewater treatment requirements of the Santa Ana Regional Water Quality Control Board?

The proposed project is consistent with the City's General Plan and would be required to meet the requisites of the City of San Bernardino and the Santa Ana RWQCB regarding wastewater quality. Further, in accordance with the City of San Bernardino Municipal Code Sections 13.08 and 13.32 regulating Connections with Public Sewer and Wastewater facilities respectively, the proposed project will pay the associated development impact fee prior to issuance of final occupancy permits. Therefore, impacts are anticipated to be less than significant. (*Less than significant*)

b) Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?

Water service to the project vicinity is provided by SBMWD and will be provided to the project site from lateral connections to existing water lines in the adjacent streets. Since the project is consistent with the City's adopted General Plan, the project-related water demand has been accounted for in the 2005 UWMP and has been planned for in the City's current Capital Improvement Plan. Additionally, as described in the Wastewater and Flow Analysis Report (Appendix K), the implementation of water-saving strategies, including highly-efficient fixtures and a graywater system for irrigation and flushing toilets, will reduce overall water usage. The project would not require or result in the construction of

⁷⁰ City of San Bernardino Municipal Water Department, 2005, *Urban Water Management Plan*, page 1-1.

⁷¹ San Bernardino Valley Municipal Water District Website, <http://www.sbvmd.com/about/>, accessed on May 3, 2011.

⁷² City of San Bernardino Website, *Integrated Waste Management Division*, http://www.ci.san-bernardino.ca.us/cityhall/publicworks/integrated_waste_management_division/default.asp, accessed on May 3, 2011.

⁷³ CalRecycle, *Active Landfill Profiles for San Timoteo and Mid Valley Landfills*, <http://www.calrecycle.ca.gov/profiles/Facility/Landfill/LFProfile1.asp?COID=36&FACID=36-AA-0087>, accessed on May 3, 2011.

new water facilities or the expansion of existing facilities other than lateral connections and would not cause a significant environmental impact.⁷⁴

As described in existing conditions, the City's wastewater treatment system is projected to exceed the existing capacity by buildout of the General Plan. Although the proposed project would increase wastewater generated on the site, the project is designed to include strategies to minimize wastewater discharge, including water efficiency, water conservation, and water reuse. As described above, highly efficient water fixtures will be used to reduce overall water use on-site and a graywater system will allow for water reuse on-site. Implementation of these approaches would reduce the amount of wastewater entering the City sewer system by millions of gallons per year, and therefore the proposed project would not require the construction of new facilities.

For the reasons stated above, impacts associated with water and wastewater facilities are anticipated to be less than significant. (*Less than significant*)

c) Would the project 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?

The project involves the construction of new on-site storm water drainage facilities, including bios-wales, pervious concrete areas, perforated storm drains, green roofs and four detention basins, as described in the Water Quality Management Plan (WQMP), provided in Appendix J). These Treatment Control BMPs would be designed to fully accommodate surface flows from the project. The rate of discharge of surface flows from the project would not exceed the existing rate of discharge from the project site. For the reasons stated above, impacts are anticipated to be less than significant. (*Less than significant*)

d) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Refer to Responses XVI a. and b. The proposed project is consistent with the City's General Plan Land Use Map and has been accounted for in the projections of the 2005 UWMP. Therefore, the proposed project will have sufficient water supplies available from existing entitlements and resources and impacts are anticipated to be less than significant. (*Less than significant*)

e) Would the project result in determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The proposed project will be served by the City of San Bernardino sewer system and the San Bernardino Water Reclamation Plant (SBWRP). As described in existing conditions, additional facilities would need to be built or expansion of existing facilities would need to be completed to accommodate the proposed buildout in the service area of the SBWRP. Mitigation presented in the City's General Plan EIR requires the City to update the Wastewater Collection System Master Plan to reflect General

⁷⁴ Mike Nevarez, Engineer, City of San Bernardino Water Department, Personal communication with Heather Martinelli, April 26, 2011.

Plan Update buildout statistics, review treatment facility capacity periodically and adjust Sewer Capacity Fees when appropriate in consultation with participating communities to accommodate construction of new or expanded wastewater treatment and collection facilities.

As described in Appendix K, the proposed project will use highly-efficient water fixtures and a gray-water system for irrigation and flushing toilets, which will save potable water and decrease sewer outflow to a level that will not affect downstream flows in the City's sanitary sewer network. The proposed project is not projected to increase off-site wastewater flows from the existing volumes estimated on the site. In addition, the graywater system would decrease overall volume discharged to the City's sewer system by millions of gallons per year. Therefore, impacts are anticipated to be less than significant. (*Less than significant*)

f) *Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*

Solid waste collection services for the proposed project will be provided by the City of San Bernardino Refuse and Recycling Division. According to the California Integrated Waste Management Board's estimated solid waste disposal rate, the proposed residential units are expected to dispose of approximately 189 tons per year (411 units times 0.46 tons per unit per year)⁷⁵. The other structures on the site would produce additional solid waste; however the overall project is not anticipated to generate a significant amount of additional solid waste into the City's waste stream.⁷⁶ Refuse would be disposed of at the San Timoteo and Mid-Valley sanitary landfills, which are permitted to receive 365,000 tons per year and 2.7 million tons per year, respectively.⁷⁷ The estimated project-generated waste represents approximately 0.06 percent and 0.0085 percent of the total permitted waste received at the landfill facilities, respectively and the landfills have sufficient permitted capacity to handle the proposed project's needs. Therefore, the impacts are anticipated to be less than significant. (*Less than significant*)

g) *Would the project comply with federal, state, and local statutes and regulations related to solid waste?*

The City of San Bernardino's Municipal Code requires an application for service and maximum diversion (50 percent of waste volumes) within 30 days of commencement of operations. The proposed project would comply with all applicable standards related to solid waste. Therefore, no impacts are anticipated. (*No impact*)

Utilities and Services Systems Mitigation Measures:

None required.

⁷⁵ California Integrated Waste Management, *Solid Waste Characterization Database*, <http://www.calrecycle.ca.gov/wastechar/ResDisp.htm>, accessed on April 20, 2011.

⁷⁶ Gracie Washington, Integrated Waste Field Inspector, City of San Bernardino Public Works, Personal communication with Heather Martinelli on April 26, 2011.

⁷⁷ CalRecycle Website, *Active Landfill Profiles for San Timoteo and Mid Valley Landfills*, <http://www.calrecycle.ca.gov/profiles/Facility/Landfill/LFPProfile1.asp?COID=36&FACID=36-AA-0087>, accessed on May 3, 2011.

XVII. GREENHOUSE GAS EMISSIONS

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? Threshold: 0 percent net increase in amount of GHG emissions.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Existing Conditions

The following discussion is based on the Waterman Gardens Master Plan Project Greenhouse Gas Assessment prepared by Impact Sciences, Inc. in July 2011 (Appendix H).

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture solar heat as it is radiated from the surface of the earth back into the atmosphere, creating a warming effect like that of a greenhouse. The accumulation of GHGs in the earth's atmosphere has been linked to global climate change, often described as changes in the climate of the earth caused by natural fluctuations and anthropogenic activities which alter the composition of the global atmosphere. California State law recognizes the following gases as GHGs: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

The California Air Resources Board (CARB) compiles GHG inventories for the State of California. Based on the 2008 GHG inventory data, California emitted 4831 MMTCO₂e including emissions resulting from imported electrical power in 2008.⁷⁸ The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities. Table 22 provides a summary of GHG emissions reported in California in 1990 and 2008 separated by categories defined by the United Nations Intergovernmental Panel on Climate Change (IPCC).

Between 1990 and 2008, the population of California grew by approximately 8.1 million (from 29.8 to 37.9 million).⁷⁹ This represents an increase of approximately 27.2 percent from 1990 population levels. In addition, the California economy, measured as gross State product, grew from \$788 billion in 1990 to \$1.8 trillion in 2008 representing an increase of approximately 128 percent (over twice the 1990

⁷⁸ California Air Resources Board, "California Greenhouse Gas 2000-2008 Inventory by Scoping Plan Category - Summary," <http://www.arb.ca.gov/cc/inventory/data/data.htm>. 2011.

⁷⁹ US Census Bureau, "Data Finders," <http://www.census.gov/>. 2009; California Department of Finance, "E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-1008, with 2000 Benchmark," <http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2009/>. 2010.

TABLE 22 *GHG EMISSIONS IN CALIFORNIA*

Source Category	1990 (MMTCO ₂ e)	Percent of Total	2008 (MMTCO ₂ e)	Percent of Total
Energy	386.41	89.2%	413.80	86.6%
Energy Industries	157.33	36.3%	171.23	35.8%
Manufacturing Industries & Construction	24.24	5.6%	16.67	3.5%
Transport	150.02	34.6%	173.94	36.4%
Other (Residential/Commercial/Institutional)	48.19	11.1%	46.59	9.8%
Non-Specified	1.38	0.3%	0.00	0.0%
Fugitive Emissions from Oil & Natural Gas	2.94	0.7%	3.28	0.7%
Fugitive Emissions from Other Energy Production	2.31	0.5%	2.09	0.4%
Industrial Processes & Product Use	18.34	4.2%	30.11	6.3%
Mineral Industry	4.85	1.1%	5.35	1.1%
Chemical Industry	2.34	0.5%	0.06	0.0%
Non-Energy Products from Fuels & Solvent Use	2.29	0.5%	1.97	0.4%
Electronics Industry	0.59	0.1%	0.80	0.2%
Substitutes for Ozone Depleting Substances	0.04	0.0%	13.89	2.9%
Other Product Manufacture and Use	3.18	0.7%	1.66	0.3%
Other	5.05	1.2%	6.39	1.3%
Agriculture, Forestry, & Other Land Use	19.11	4.4%	24.42	5.1%
Livestock	11.67	2.7%	16.28	3.4%
Land	0.19	0.0%	0.19	0.0%
Aggregate Sources & Non-CO ₂ Sources on Land	7.26	1.7%	7.95	1.7%
Waste	9.42	2.2%	9.41	2.0%
Solid Waste Disposal	6.26	1.4%	6.71	1.4%
Wastewater Treatment & Discharge	3.17	0.7%	2.70	0.6%
Emissions Summary				
Gross California Emissions	433.29		477.74	
Sinks from Forests and Rangelands	-6.69		-3.98	
Net California Emissions	426.60		473.76	

Sources:

1. California Air Resources Board, "California Greenhouse Gas 1990-2004 Inventory by IPCC Category - Summary," <http://www.arb.ca.gov/cc/inventory/archive/archive.htm>. 2011.
2. California Air Resources Board, "California Greenhouse Gas 2000-2008 Inventory by IPCC Category - Summary," <http://www.arb.ca.gov/cc/inventory/data/data.htm>. 2011.

gross State product).⁸⁰ Despite the population and economic growth, California's net GHG emissions only grew by approximately 11 percent. The CEC attributes the slow rate of growth to the success of California's renewable energy programs and its commitment to clean air and clean energy.⁸¹

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which Statewide emission of GHGs would be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

In 2006, Governor Schwarzenegger signed AB 32, the Global Warming Solutions Act, into law. AB 32 requires that California reduce its GHG emissions to 1990 levels by 2020. AB 32 also requires that CARB identify discrete early actions to reduce emissions that could be implemented immediately, and develop a statewide scoping plan to identify how to meet the emissions reduction targets.

CARB identified a list of nine early actions, including landfill CH₄ capture, the Low Carbon Fuel Standard, and a tire pressure program. CARB's Climate Change Scoping Plan, adopted in December 2008, outlines regulations, market mechanisms, and other actions to achieve the maximum technologically-feasible and cost-effective reductions in GHG emissions by 2020.⁸² The Scoping Plan recommends achieving a statewide energy mix with 33 percent from renewable energy sources, developing a California cap-and-trade program that will be part of a regional carbon market through the Western Climate Initiative, and expanding and strengthening existing energy efficiency programs and building and appliance standards.

On September 30, 2008, Governor Schwarzenegger signed into law SB 375. SB 375 focuses on housing and transportation planning decisions to reduce fossil fuel consumption and conserve farmlands and habitat. SB 375 provides a path for improved planning by providing incentives to locate housing developments closer to where people work and go to school, allowing them to reduce vehicle miles traveled every year. Finally, SB 375 provides certain exemptions under CEQA law for projects that are proposed consistent with local plans developed under SB 375. SANBAG will prepare a Sustainable Communities Strategy for San Bernardino County to implement this bill.

The City of San Bernardino is in the process of creating a Sustainability Master Plan (SMP). The SMP is comprised of policies and measures that, when implemented, will enable the City to reduce GHG emissions from City operations and within the community at-large. The strategies within the SMP will cover a variety of sectors, including land use, transportation, waste, water, and green infrastructure.

⁸⁰ California Department of Finance, "Financial & Economic Data: Gross Domestic Product, California," http://www.dof.ca.gov/HTML/FS_DATA/LatestEconData/FS_Misc.htm. 2010. Amounts are based on current dollars as of the data of the report (June 2, 2009).

⁸¹ California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004*, (2006).

⁸² California Air Resources Board website, www.arb.ca.gov, accessed on March 17, 2010.

Discussion

The proposed project is evaluated in this IS/MND for potential impacts related to GHG emissions and climate change and utilized approved emissions models and guidelines as tools to create the analytical basis for the assessment. The data sources and tools used to evaluate the GHG impacts associated with construction and operation of the proposed project include the California Emissions Estimator Model (CalEEMod)⁸³, which was used to analyze the proposed project emissions during construction and operation. CalEEMod is a program that calculates air emissions from land use sources and incorporates CARB's EMFAC2007 model for on-road vehicle emissions and the OFFROAD2007 model for off-road vehicle emissions. CalEEMod also utilizes data from the CEC, IPCC, CARB, U.S. EPA and CAPCOA. During project construction, the model can analyze emissions that occur during different phases, such as building construction and architectural coating, concurrently or separately.

a) Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? Threshold: 0 percent net increase in amount of GHG emissions.

The proposed project would result in short-term emissions of GHGs during construction. These emissions, primarily CO₂, CH₄, and N₂O, are the result of fuel combustion by construction equipment and motor vehicles. The other primary GHGs (hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) are typically associated with specific industrial sources and are not expected to be emitted by the project. The emissions of CO₂, CH₄, and N₂O were estimated using CalEEMod.

Site-specific or project-specific data were used in the CalEEMod model where available. Construction would take place during four main phases. Based on available funding, Phase 1 would begin in 2013 and last approximately two years. Phase 2 would begin in 2015 and last approximately three to four years. Phase 3 would begin in 2018 and last approximately two to three years. Phase 4 would begin in 2020 and last just over two years. The existing project site is currently developed; therefore, demolition activity would occur during the start of each construction phase. The phases would overlap to some extent such that demolition for the upcoming phase would occur during the final months of construction from the preceding phase. Table 23 lists the estimated GHG emissions associated with construction of the proposed project.

Current CEQA practice is to annualize construction-related GHG emissions over a project's lifetime in order to include these emissions as part of a project's annualized lifetime total emissions, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies. In accordance with this methodology, the estimated project's construction GHG emissions have been annualized over a 30-year period and are included in the annualized operational GHG emissions discussed below.

Operational GHG Emissions

The proposed project would become operational in phases as each construction phase is completed, but would commence full operation in late 2022. At full buildout, the project would result in direct annual emissions of GHGs during operation. These emissions, primarily CO₂, CH₄, and N₂O, are the

⁸³ South Coast Air Quality Management District, "CalEEMod, Version 2011.1.1," <http://www.caleemod.com/>.

TABLE 23 *ESTIMATED CONSTRUCTION GREENHOUSE GAS EMISSIONS*

GHG Emissions Source	Emissions (Metric Tons CO ₂ e/year)
2013 Construction Emissions	716.17
2014 Construction Emissions	591.79
2015 Construction Emissions	919.16
2016 Construction Emissions	855.44
2017 Construction Emissions	669.90
2018 Construction Emissions	888.80
2019 Construction Emissions	896.97
2020 Construction Emissions	787.10
2021 Construction Emissions	799.24
2022 Construction Emissions	504.56
Total Construction Emissions	7,629.13
Annualized over Project Lifetime	254.30

Source: Impact Sciences, Inc. Totals in table may not appear to add exactly due to rounding.

result of fuel combustion from building heating systems and motor vehicles. Building and motor vehicle air conditioning systems may use HFCs (and HCFCs and CFCs to the extent that they have not been completely phased out at later dates); however, these emissions are not quantified since they would only occur through accidental leaks. It is not possible to estimate the frequency of accidental leaks without some level of speculation. It should be noted that CARB is in the process of adopting regulations that would reduce emissions of these refrigerants from stationary refrigeration and air-conditioning systems by requiring persons subject to the rule to reclaim, recover, or recycle refrigerant and to properly repair or replace faulty refrigeration and air conditioning equipment.⁸⁴

Operational emissions would be generated by both area and mobile sources as a result of normal day-to-day activities on the project site after occupation. Area source emissions would be generated by the consumption of natural gas for space and water heating devices (including residential use water heater and boilers), and the operation of landscape maintenance equipment. Mobile emissions would be generated by the motor vehicles traveling to and from the project site.

The project would demolish the existing 252 residential unit development and construct approximately 411 residential units, a 38,000-square-foot recreational center, a 44,000-square-foot community support center, a 7,400-square-foot administration building, and a 13,400-square-foot maintenance building and youth/jobs training facility. The operational emissions associated with the proposed project were estimated using the CalEEMod model. The proposed project would be fully operational in 2022;

⁸⁴ California Air Resources Board, “Stationary Equipment Refrigerant Management Program,” <http://www.arb.ca.gov/cc/reftrack/reftrack.htm>. 2011. This regulation is an early action measure under AB 32.

therefore, the year 2022 was used to estimate the operational emissions. Area source emissions are based on emission factors for natural gas and gasoline (for landscaping equipment) contained in the CalEEMod model. Trip generation rates provided in the traffic report for the project were used to estimate the mobile source emissions.⁸⁵ The proposed project would also result in indirect GHG emissions due to the electricity demand. The emission factor for CO₂ due to electrical demand from Southern California Edison, the electrical utility serving the proposed project, was selected in the CalEEMod model. Emission factors for CO₂ are based on CARB's Local Government Operations Protocol.⁸⁶ Emission factors for CH₄ and N₂O are based on U.S. EPA values.⁸⁷ The cited factors in the CARB report are based on data collected by the California Climate Action Registry. The emission factors take into account the current mix of energy sources used to generate electricity and the relative carbon intensities of these sources, and includes natural gas, coal, nuclear, large hydroelectric, and other renewable sources of energy.

Electricity consumption was based on default data found in CalEEMod for the respective land use types. In addition to electrical demand, the project would also result in indirect GHG emissions due to water consumption, wastewater treatment, and solid waste generation. CalEEMod default values were used for consumption of water and the generation of waste as well as the emissions resulting from these activities. GHG emissions from water consumption are due to the electricity needed to convey, treat, and distribute water. The annual electrical demand factors for potable water were obtained from the CEC.⁸⁸ GHG emissions from wastewater are due to the electricity needed to treat wastewater and the treatment process itself, which primarily releases CH₄ into the atmosphere. GHG emission factors for wastewater treatment were obtained from the U.S. EPA.⁸⁹ GHG emissions from solid waste generation are due to the decomposition of organic material, which releases CH₄ into the atmosphere. The GHG emission factor for solid waste generation was based on IPCC methods for quantifying GHG emissions from solid waste and waste disposal rates were based on Calrecycle data.⁹⁰

The annual GHG emissions associated with the operation of the proposed project are provided below in Table 24. Direct and indirect emissions operational associated with the proposed project were compared with the SCAQMD's threshold of significance for mixed-use and all land use projects, which is 3,000 MTCO_{2e} per year.

Impact GHG-1: As shown in Table 24, the proposed project would result in net emissions over 3,000 MTCO_{2e} per year, resulting in a significant impact with respect to GHG emissions. Implementation of Mitigation Measure GHG-1 would reduce the impact to a less than significant level. Therefore, the

⁸⁵ Fehr & Peers, *Draft Waterman Gardens Master Plan Traffic Impact Analysis*, (2011).

⁸⁶ California Air Resources Board, *Local Government Operations Protocol for the Quantification and Reporting of Greenhouse Gas Emissions Inventories*, Version 1.1, (2010) 208.

⁸⁷ U.S. Environmental Protection Agency, "E-Grid," <http://www.epa.gov/cleanenergy/energy-resources/egrid/index.html>. nd.

⁸⁸ California Energy Commission, *Refining Estimates of Water-Related Energy Use in California, PIER Final Project Report* (CEC-500-2006-118), (2006) 22. Prepared by Navigant Consulting, Inc.

⁸⁹ U.S. Environmental Protection Agency, *Compilation of Air Pollutant Emission Factors, AP-42*, Fifth Edition, Volume I, Chapter 4.3.5, (1998).

⁹⁰ IPCC, *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. 2006.

proposed project would result in a less than significant impact with mitigation measures. (*Less than significant with mitigation*)

TABLE 24 **ESTIMATED OPERATIONAL GREENHOUSE GAS EMISSIONS**

Operational GHG Emissions from Area, and Mobile and Indirect Sources	GHG Emissions (MTCO₂e/Year)
Proposed Project	
Construction (Annualized) Emissions	254
Operational (Mobile) Sources	6,046
Area and Natural Gas Sources	13
Electrical Consumption	1,845
Solid Waste and Wastewater Generation	390
Water Supply	876
<i>Total Proposed</i>	<i>9,424</i>
Existing	
Operational (Mobile) Sources	4,402
Area and Natural Gas Sources	190
Electrical Consumption	558
Solid Waste and Wastewater Generation	53
Water Supply	111
<i>Total Existing</i>	<i>5,314</i>
Total Net Emissions	4,110
SCAQMD Threshold	3,000
Exceed Threshold?	YES

Source: Impact Sciences, Inc.

Mitigation Measure GHG-1: The project shall comply with and incorporate the following measures:

- ◆ Exceed the Title 24 energy use standards for green buildings by 15 percent;
- ◆ Use energy-efficient LED lights for outdoor lighting;
- ◆ Install low-flow faucets and toilets;
- ◆ Provide active stormwater management for reuse in landscape irrigation;
- ◆ Install water-efficient landscaping;
- ◆ Include a recycling center on-site;
- ◆ Enhance street and walkway design for improved pedestrian use and connection to public transit;
- ◆ Install light-colored roofs and walkways as well as shade trees to reduce heat island effects.

The annual GHG emissions associated with the operation of the proposed project after mitigation are provided below in Table 25, Mitigated Operational Greenhouse Gas Emissions. Direct and indirect mitigated operational emissions associated with the proposed project are compared with the

SCAQMD’s threshold of significance for mixed-use and all land use projects, which is 3,000 MTCO_{2e} per year.

TABLE 25 *MITIGATED OPERATIONAL GREENHOUSE GAS EMISSIONS*

Operational GHG Emissions from Area, and Mobile and Indirect Sources	GHG Emissions (MTCO_{2e}/Year)
Proposed Project	
Construction (Annualized) Emissions	254
Operational (Mobile) Sources	5,358
Area and Natural Gas Sources	13
Electrical Consumption	1,723
Solid Waste and Wastewater Generation	195
Water Supply	717
Total Proposed	8,260
Total Existing	5,314
Total Net Emissions	2,946
SCAQMD Threshold	3,000
Exceed Threshold?	NO

Source: Impact Sciences, Inc.

b) Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

AB 32 is the State of California’s primary GHG emissions regulation, as previously discussed. The SCAQMD GHG significance threshold was designed to ensure compliance with AB 32 emissions reductions requirements in the South Coast. Therefore, if a proposed project emissions are below the draft significance threshold it can be assumed to comply with AB 32 within the SCAQMD jurisdiction. As the project would emit net emissions less than 3,000 MTCO_{2e} of GHG per year, the proposed project would not conflict with the State’s ability to achieve the reduction targets under AB 32.

Further, through implementation of Mitigation Measure GHG-1, the proposed project would incorporate GHG control measures that would reduce the project’s GHG emissions beyond regulatory requirements. The proposed project would incorporate required and feasible GHG control measures, and would not hinder, disrupt or delay the implementation of any such control measures. Therefore, the proposed project would not conflict with the State’s ability to achieve GHG reductions pursuant to AB 32 and result in a less than significant impact on climate change. *(Less than significant)*

Greenhouse Gas Emissions Mitigation Measures:

GHG-1: The project shall comply with and incorporate the following measures:

- ◆ Exceed the Title 24 energy use standards for green buildings by 15 percent;
- ◆ Use energy-efficient LED lights for outdoor lighting;

- ◆ Install low-flow faucets and toilets;
- ◆ Provide active stormwater management for reuse in landscape irrigation;
- ◆ Install water-efficient landscaping;
- ◆ Include a recycling center on-site;
- ◆ Enhance street and walkway design for improved pedestrian use and connection to public transit;
- ◆ Install light-colored roofs and walkways as well as shade trees to reduce heat island effects.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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?

As described above, the project site is in an urbanized, extensively developed area near the center of San Bernardino. There are no sensitive natural communities, no areas of sensitive habitat, and no areas of critical habitat occurring on the project site. Additionally, there are no buildings currently listed or deemed eligible for listing on the California Register of Historical Resources, no recorded archaeological sites, and no known paleontological resources located on the project site. A less-than-significant impact to the environment and wildlife of the project site is anticipated. (*Less than significant*)

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)?

While the proposed project has the potential to have significant impacts, as described in the previous sections, these impacts would be reduced to less than significant levels through incorporation of mitigation measures. However, there are certain areas in which cumulative impacts could occur as a result of this project when combined with the effects of past, current and probable future projects. Specifically, impacts to air quality, noise, transportation and traffic, and greenhouse gas emissions, although

mitigated to less than significant levels for the proposed project, could result in cumulative impacts. However, the analysis of each of these areas includes cumulative projects, and therefore, the potential cumulative impacts have been mitigated as well. As a result, the proposed project would not result in cumulatively considerable impacts. (*Less than significant*)

c) *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

Substantial adverse direct or indirect effects on human beings would occur with unmitigated potentially significant impacts from the project on a regional or local level. Since development of the project site has been addressed in the certified General Plan EIR and considered with regional planning programs, the development would not have substantial adverse regional effects on human beings either directly or indirectly. The proposed development intensity is not beyond what was considered for the site in the City's General Plan. Mitigation measures and design features have been included in the proposed project to reduce substantial adverse effects on human beings in the project vicinity both directly and indirectly and include measures to reduce project-related emissions, buffer project-generated light and noise, provide enhanced landscaping, and to control traffic and provide safe ingress/egress within the local vicinity. Therefore, the direct and indirect environmental effects of the project on human beings have been either previously assessed in the General Plan EIR and/or addressed with project design features and mitigation measures identified herein. Therefore, direct and indirect adverse effects on human beings from the project, potentially significant short-term, long-term, and cumulative impacts, are less than significant with mitigation. (*Less than significant with mitigation*)



1917 INDIA STREET, SUITE D SAN DIEGO, CA 92101 TEL: 619 295 6203 FAX: 619 297 2354